Memorandum to the Council of

Corporation of the Municipality of Temagami

Subject: 2025-M- 028 - OCWA 2024 Water and Wastewater Capacity and Flow Report

Memo No: 2025-M-028

Date: February 13, 2025

Attachment: Appendix A - Q1 to Q4 2024 OCWA Operations Reports

Prepared By: Laala Jahanshahloo - CAO/ Treasurer

Recommendation

BE IT RESOLVED THAT Council receives Memo 2025-M-026 as presented.

Contents

Executive Summary

The 2024 Water & Wastewater Capacity and Flow Report provides a comprehensive review of the Municipality of Temagami's water and wastewater system performance, including comparisons with provincial averages and key recommendations to enhance system resilience and efficiency. Key findings include:

- **Water Treatment Plants (WTPs)**: The North WTP exceeded its rated capacity on October 8 due to a service line break and flushing, reaching 117% of its limit. The South WTP remained well within capacity, with a peak utilization of 39%.
- **Wastewater Lagoons**: The North Lagoon experienced significant challenges from extreme rainfall, occasionally surpassing its design capacity. The South Lagoon operated stably, with seasonal discharges into Snake Lake.
- **Compliance & Performance**: Water loss percentages (8-11%) remained within provincial expectations, and consumption levels aligned with those of small Ontario municipalities.
- **Infrastructure Considerations**: Strategic investments are recommended to mitigate extreme weather impacts, particularly for the North WTP and Lagoon.

Background

This report provides an annual summary of water and wastewater flow data for the Municipality of Temagami in 2024, comparing trends at the North and South Water Treatment Plants (WTPs) and Wastewater Lagoons (WWLs) against provincial benchmarks. Quarterly reports from the Ontario Clean Water Agency (OCWA) offer detailed insights into flow rates, compliance monitoring, maintenance activities, and corrective actions.

Water System Performance

- **Temagami North Water Treatment Plant**
    - **Total Raw Flow in 2024:** 61,533 m^3
    - **Total Treated Flow in 2024:** 56,559 m^3

- **Average Daily Treated Flow:** 155 m^3/day
- **Peak Treated Flow:** 385 m^3/day (October 8, due to service line break & flushing)
- **Capacity Utilization:**
  - ✓ Rated maximum capacity: **328 m^3/day**
  - ✓ Peak utilization: **117%** (exceeded limit on October 8)

- **Temagami South Water Treatment Plant**
  - **Total Raw Flow in 2024:** 82,928 m^3
  - **Total Treated Flow in 2024:** 74,007 m^3
  - **Average Daily Treated Flow:** 202 m^3/day
  - **Peak Treated Flow:** 370 m^3/day (June 11-12, due to distribution flushing)
  - **Capacity Utilization:**
    - ✓ Rated maximum capacity: **950 m^3/day**
    - ✓ Peak utilization: **39%**

Wastewater System Performance

- **Temagami North Lagoon**
  - **Total Influent Flow in 2024:** 109,108 m^3
  - **Average Daily Influent Flow:** 298 m^3/day
  - **Peak Influent Flow:** 1,479 m^3/day (April 12, due to extreme rainfall)
  - **Capacity Utilization:**
    - ✓ Rated average capacity: **390 m^3/day**
    - ✓ Exceeded design capacity on multiple occasions due to extreme rainfall events.

- **Temagami South Lagoon**
    - **Total Influent Flow in 2024:** 56,357 m^3
    - **Average Daily Influent Flow:** 154 m^3/day
    - **Peak Influent Flow:** 318 m^3/day (April 12, due to extreme rainfall**)**
    - **Capacity Utilization:**
        - ✓ Rated average capacity: **232 m^3/day**
        - ✓ Seasonal discharges to Snake Lake in May and October.

Comparison with Provincial Averages

- **Temagami Water Treatment Plant Performance Comparison**

Parameter	North WTP	South WTP	Ontario Average (Small Municipalities)
Daily Water Consumption (L/person)	~300	~280	275-350
Peak Flow Capacity Utilization (%)	117%	39%	70-90% (Typically)
% Difference (Raw – Treated)	8%	11%	5-10%
Watermain Break Incidents	2	1	2-4 per 100 km/year

- **Wastewater Lagoon Performance Comparison**

Parameter	North Lagoon	South Lagoon	Ontario Average (Small Municipalities)
Avg. Daily Wastewater Flow (m^3/person)	~0.3	~0.2	0.25-0.35
Peak Flow Capacity Utilization (%)	123%	66%	70-90% (Typically)
Major Overflow Incidents	1	0	1-3 per year

Key Observations

- **Exceedance at North WTP:**
    - On October 8, the North WTP exceeded its permitted flow (385 m^3 treated vs. 328 m^3/day limit).
    - Infrastructure improvements or adjustments to operational protocols may be required to prevent recurrence.
- **Peak Flow Challenges at North Lagoon:**
    - Extreme rainfall events caused peak influent flows to exceed the design capacity.
    - Continuous monitoring and stormwater mitigation strategies should be explored.
- **South System Operating Below Capacity:**
    - The South WTP and Lagoon operate well below their rated capacity, providing flexibility for future development.
- **Comparative Efficiency:**
    - Water loss (difference between raw and treated flow) is within expected ranges (8-11%).
    - Consumption per capita aligns with provincial norms.

Conclusion

The Municipality of Temagami's water and wastewater systems are generally performing within expected operational ranges. However, infrastructure limitations and extreme weather events have caused exceedances in certain areas. Strategic investments and improved monitoring are recommended to enhance system resilience.

Municipality of Temagami Water and Wastewater Systems Quarterly Operations Report

January 1 to March 31, 2024

SUBMITTED BY

Ontario Clean Water Agency
15 Government Road East
Kirkland Lake, ON P2N 3J5

May 10, 2024, Rev. 0

Prepared by the Ontario Clean Water Agency
On behalf of the Municipality of Temagami

Table of Contents

1 Introduction

The Quarterly Operations Report summarizes regulatory compliance, quality management and system monitoring information. It provides a list of completed capital and major work projects and any call-outs that occurred after hours. It also includes complaints received and Health and Safety activities or issues that occurred during the quarter.

2 Regulatory Compliance

2.1 Summary of Reportable Events

Facility	Date	MECP Event No.	Event/Non-compliance	Corrective Action
Temagami North DWS	January 29, 2024	1-4MDWE9	The system's license allows a maximium total volume of 328 m^3 per day of treated water to enter the distribution system. The total daily flow exceeded this limit on the following days: January 29th = 329 m3 January 30 = 329 m3 February 1 = 349 m3 February 3 = 368 February 4 = 341 m3	The suspected cause of the exceedance was a watermain break on Birch Street. Operators investigated the area and found the break which was repaired on February 6th.

2.2 Third Party Inspections and Findings

The MECP conducted an inspection of the Temagami South DWS on November 2, 2023. The report dated January 17, 2024 identified six (6) non-compliances with 5 relating to the same issue; loss of filter turbidity monitoring that went unnoticed on 2 occasions in July 2023.

OCWA met with Vesna Alimpic of the MECP on January 25th to discuss the seriousness of the turbidity incidents. OCWA prepared and Action Plan to address the issues which was accepted by the Ministry.

The sixth non-compliance occurred when a secondary distribution chlorine residual was tested too early during the week of April 9, 2023. This non-compliance was reported to the MECP shortly after it was discovered and procedures were implemented to prevent this from re-occurring.

2.3 Quality and Environmental Management System (QEMS)

DWQMS Awareness training is scheduled for April 24, 2024 to prepare new and existing staff for the upcoming audits.

Re-accreditation audits by SAI Global have been scheduled for May 6th (desk-top) and June 26th (on-site).

2.4 Reporting

A summary of regulatory reports submitted by OCWA on behalf of the Municipality are listed in the tables below.

Water System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual/Summary Reports for North and South Drinking Water Systems	By February 28th of each year	MECP and Owner	February 15, 2024

Sewage System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual Performance Reports for the North and South Lagoons	By March 31st of each year	MECP and Owner	March 22, 2024
Annual WSER Reporting for the North and South Lagoons	45 days after the end of the year	Environment Canada	January 26, 2024
Temagami North Lagoon – Quarterly Overflow/Bypass Reports	45 days after the quarter	MECP	January 11, 2024 (Q4 2023)
Quarterly Effluent Discharge Data Reports	The Ontario Clean Water Agency (OCWA) has an arrangement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter	MECP	February 15, 2024 (Q4, 2023)

2.5 Other Important Information

<u>Temagami Sewage Collection System</u>

2024 deliverables as described in the CLI ECA for the Sewage Collection System:

- October 17, 2024 – Significant Drinking Water Threat Assessment required.

3 Monitoring Program

3.1 Monitoring Data

Drinking water sampling and testing required by Ontario Regulation 170/03 was completed this quarter and all results fell within regulatory limits.

Wastewater sampling and testing required by the systems' Environmental Compliance Approvals and the Wastewater Systems Effluent Regulation was completed this quarter and all results fell within their compliance limits.

Quarterly bacteriological sampling required under the Ministry of Health's Directive for the Marten River Fire Hall and the Temagami Chalet was completed this quarter on January 8th. Results were acceptable meeting regulatory limits.

Refer to Appendix A for Quarterly Data Reports.

3.2 Flows

3.2.1 Temagami North Water Treatment Plant

2024	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (328 m^3/day)
January	7492	7338	2.1%	237	329	100%*
February	5825	5524	5.2%	190	368	112%*
March	5074	4611	9.1%	149	199	61%

* High flows began in January and continued to February 6th due to a watermain break on Birch Street.

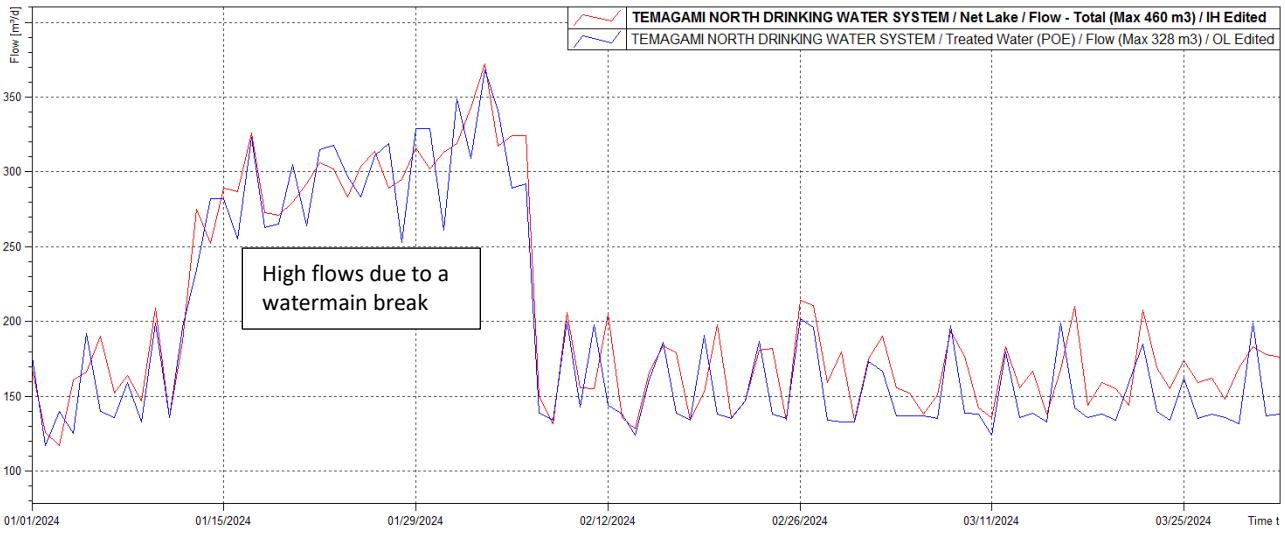

Figure 1: Temagami North WTP – Raw Water vs Treated Water Flow (January to March 2024)

3.2.2 Temagami North Lagoon

2024	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (390 m^3/d)	Maximum Influent Flow (m^3/d)	% of Rated Maximum Capacity (1200 m^3/day)
January	7525	243	62%	307	26%
February	6477	223	57%	431	36%
March	13408	433	111%*	930	78%

* High flows occurred in March due to a heavy rainfall.

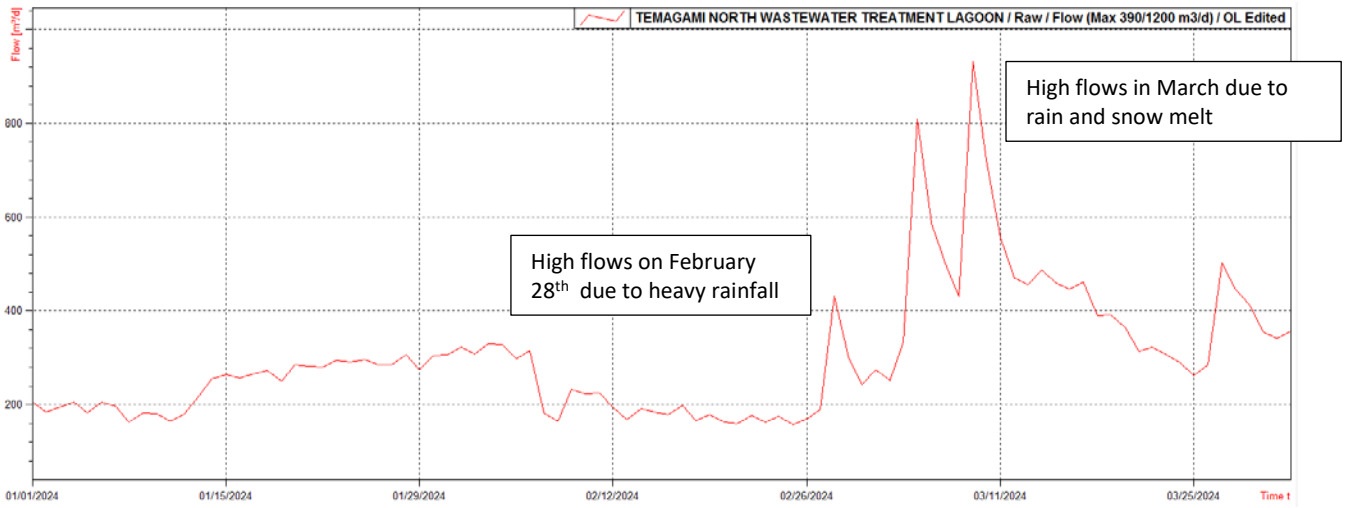

Figure 2: Temagami North Lagoon – Influent Flow (January to March 2024)

3.2.3 Temagami South Water Treatment Plant

2024	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (950 m^3/day)
January	4707	4197	10.8%	135	177	19%
February	4651	4160	10.6%	143	191	20%
March	5477	4863	11.2%	157	192	20%

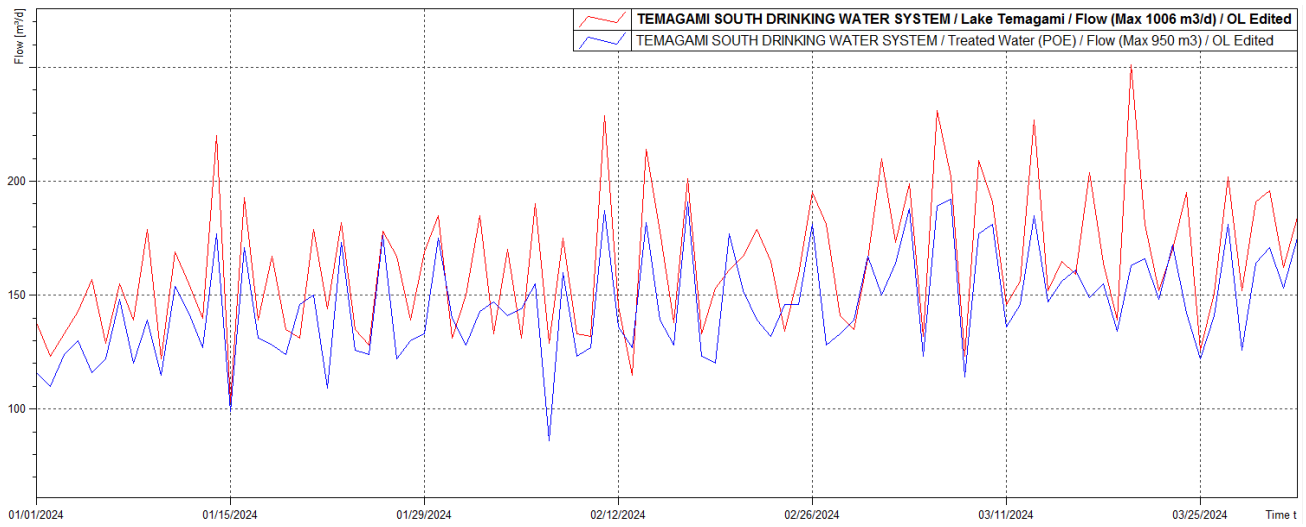

Figure 3: Temagami South WTP – Raw Water vs Treated Water Flow (January to March 2024)

3.2.4 Temagami South Lagoon

2024	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (232 m^3/d)	Maximum Influent Flow (m^3/d)	Average Daily Effluent Flow (2877 m^3/day)
January	4492	145	63%	172	N/A
February	3896	134	58%	146	N/A
March	5384	174	75%	199	N/A

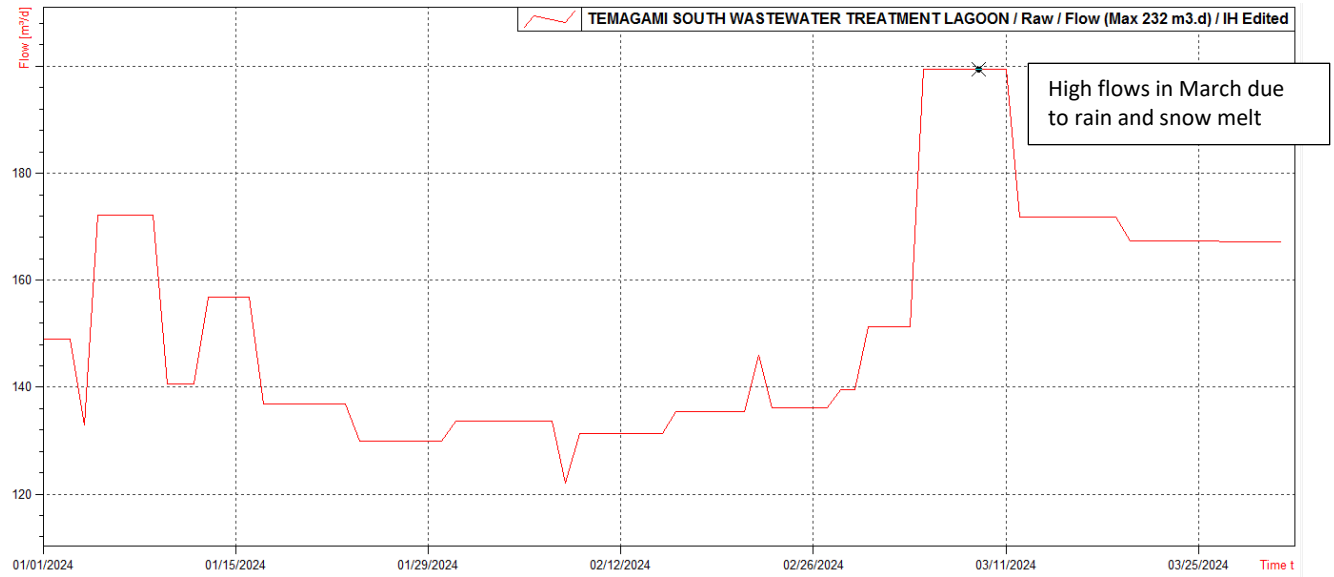

Figure 4: Temagami South Lagoon – Influent Flow (January to March 2024)

4 Asset Management

Preventative maintenance and equipment calibrations are scheduled, assigned and tracked using OCWA's Workplace Management System (Maximo). All monthly and quarterly work orders scheduled for this quarter were completed.

Corrective and emergency maintenance is also managed using Maximo. A summary of emergency and corrective work orders along with detailed maintenance reports can be made available upon request.

5 Capital & Major Maintenance Projects

Status of capital and major maintenance work completed to date in 2024

Temagami North Drinking Water System	
Project	**Status**
High flow investigation – water main break on Birch Street	Complete - February
Replaced the chlorine residual analyzer (CL-17)	Complete - March

Temagami North Lagoon	
Project	Status
Installed pump at Spruce Drive SPS	Complete - February
Cedar SPS - Installed data logger	Complete - March

Temagami South Drinking Water System	
Project	Status
None	

Temagami South Lagoon	
Project	Status
None	

6 Call-Out Summary

System	Call-outs this Quarter	Total to Date
Temagami North DWS	3	3
Temagami North Lagoon	0	0
Temagami South DWS	3	3
Temagami South Lagoon	0	0
TOTAL	**6**	**6**

*Note: Not all call-outs are billed to the Owner; depends on the nature of the call.

Refer to Appendix B for a detailed after hour call back summary.

7 Complaints

17 Cedar Avenue - One water complaint was received on February 23rd after the watermain repair on Birch Street. A nearby hydrant was flushed to improve water quality. A bacteriological sample was collected and results were acceptable. Results were provided to the Owner.

8 Health and Safety

8.1 Incidents

Number of Health and Safety Incidents reported this quarter = 0

8.2 Inspections

The annual workplace inspection was conducted at the water treatment plants and no issues were identified.

8.3 Training

Health and Safety training sessions completed this quarter include:

- January – WHMIS
- February – Respiratory Protection
- March – Site Specific Hazard Identification Process (Workplace Inspections)

APPENDIX A
Quarterly Data Reports

Temagami North Drinking Water System		January	February	March	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	326	372	210	Max. = 460
Raw Flow - Maximum Flow Rate	L/min	473	403	387	Max. = 456
Treated Flow - Maximum Daily Volume	m^3/d	329 [1]	368 [1]	199	Max. = 328
Treated Flow - Maximum Flow Rate	L/min	659	695	655	Max. = 1140 (CT) [2]
Raw Water					
Total Coliforms - Maximum	c/100mL	130	72	> 400	N/A
E.coli - Maximum	c/100mL	< 2	< 2	< 2	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	1.34	1.33	1.20	Min. = 0.85 (CT) [2]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 1 Turbidity - Maximum	NTU	0.26	0.23	0.25	Max. = 1
Filter 2 Turbidity - Maximum	NTU	0.26	0.48	0.34	Max. = 1
% of time turbidity ≤ 0.3 NTU	Filter 1	100	100	100	Min. = 95%
% of time turbidity ≤ 0.3 NTU	Filter 2	100	100	99.9	Min. = 95%
Nitrite	mg/L	< 0.05	-	-	Max. = 1
Nitrate	mg/L	< 0.05	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.71	0.75	0.73	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	54.9	-	-	Max. = 100 µg/L (RAA) [3]
Haloacetic Acids (HAAs)	µg/L	39	-	-	Max. = 80 µg/L (RAA) [4]
Lead - Maximum	µg/L	-	-	< 0.1	Max. = 10 µg/L [5]
Alkalinity – Maximum	mg/L	-	-	41	N/A [6]

Notes:

1 High flows began in January and continued to February 6th due to a watermain break on Birch Street.

2 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami North water plant if the treated flow leaving the plant goes above 1140 L/minute or the free chlorine residual level drops below 0.85 mg/L to ensure primary disinfection is achieved. Primary disinfection was achieved this quarter.

3 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 64.2 ug/L

4 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 47.5 ug/L

5 Lead testing required every 3 years in March and September. Lead testing is required in 2024. First round of lead sampling was done in on March 21, 2024.

6 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami North Wastewater Lagoon		January	February	March	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	243	223	433	Avg. Capacity = 390
Influent – Maximum Daily Flow	m^3/d	307	431	930	Max. Capacity = 1200
Influent					
BOD_5 – Average	mg/L	26	88	38	N/A
Total Suspended Solids (TSS) – Average	mg/L	28	116	47	N/A
Total Phosphorus (TP) – Average	mg/L	0.793	1.99	0.890	N/A
Total Ammonia (TKN) – Average	mg/L	10.8	15.6	8.95	N/A
Effluent					
$cBOD_5$ – Average	mg/L	4.3	4.1	9.4	Monthly Average = 20
TSS – Average	mg/L	13	12	19	Monthly Average = 30
TP – Average	mg/L	0.140	0.194	0.217	Monthly Average = 0.6
Total Ammonia Nitrogen (TAN) – Average	mg/L	1.63	2.95	1.72	Monthly Average = 6
Dissolved Oxygen (DO) - Average	mg/L	13	12	16	N/A
Un-ionized Ammonia - Average	mg/L	0.015	0.009	0.030	N/A
E.coli - Geometric Mean (MGM) [1]	cfu/100mL	407	2595	259	N/A
Temperature – Average	°C	1.4	2.1	1.7	N/A
pH – Minimum to Maximum		7.35 to 8.68	7.20 to 7.72	8.10 to 8.46	6.0 to 9.5 (inclusive)

Notes:

1 MGM *for E. coli* means the monthly geometric mean density of the sample results.

Temagami South Drinking Water System		January	February	March	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	220	229	251	Max. = 1006
Raw Flow - Maximum Flow Rate	L/min	627	610	617	Max. = 700
Treated Flow - Maximum Daily Volume	m^3/d	177	191	192	Max. = 950
Treated Flow - Maximum Flow Rate	L/min	680	683	685	Max. = 1200 (CT) [1]
Raw Water					
Total Coliforms - Maximum	c/100mL	68	40	80	N/A
E.coli - Maximum	c/100mL	< 2	< 2	< 2	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	1.35	1.06	0.79 [1]	Min. = 1.00 (CT) [1]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 2 Turbidity - Maximum	NTU	0.43	0.57	0.58	Max. = 1
% of time turbidity ≤ 0.3 NTU	Filter 2	100	100	100	Min. = 95%
Nitrite	mg/L	< 0.05	-	-	Max. = 1
Nitrate	mg/L	< 0.05	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	1.18	1.18	1.01	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	36.8	-	-	Max. = 100 µg/L (RAA) [2]
Haloacetic Acids (HAAs)	µg/L	20	-	-	Max. = 80 µg/L (RAA) [3]
Lead - Maximum	µg/L	-	-	4.1	Max. = 10 µg/L [4]
Alkalinity – Maximum	mg/L	-	-	32	N/A [5]

Notes:

1 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami South water plant if the treated flow leaving the plant goes above 1200 L/minute or the free chlorine residual level drops below 1.00 mg/L to ensure primary disinfection is achieved. Primary disinfection was achieved this quarter.

March 27 - low free chlorine of 0.79 mg/L due to 2 holes in the chlorine feed lines. Lines repaired and chlorine levels restored.

March 29 – low free chlorine of 0.92 mg/L due to a chemical pump failure. Primed pumps and chlorine levels restored.

2 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 43.1 ug/L

3 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 40.5 ug/L

4 Lead testing required every 3 years in March and September. Lead testing is required in 2024. First round of lead sampling was done in on March 21, 2024.

5 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami South Wastewater System		January	February	March	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	145	134	166	Avg. Capacity = 232
Influent – Maximum Daily Flow	m^3/d	172	146	199	Max. Capacity = N/A
Influent					
BOD_5 – Average	mg/L	140	-	-	N/A
Total Suspended Solids (TSS) – Average	mg/L	143	-	-	N/A
Total Phosphorus (TP) – Average	mg/L	4.55	-	-	N/A
Total Ammonia (TKN) – Average	mg/L	32.7	-	-	N/A
Cell Contents Prior Discharge [1]					
Total Suspended Solids (TSS)	mg/L	-	-	-	N/A
Total Phosphorus (TP)	mg/L	-	-	-	N/A
Hydrogen Sulphide (HS)	mg/L	-	-	-	N/A
E. coli	cfu/100 mL	-	-	-	N/A
Effluent					
Discharge Period		-	-	-	Oct. 15 to Nov. 30
Average Discharge Flow	m^3/d	-	-	-	Max. = 2877
$cBOD_5$ – Average	mg/L	-	-	-	Annual Average = 25
BOD_5 – Average	mg/L	-	-	-	Seasonal Average = 25
BOD_5 – Loadings	kg/d	-	-	-	Seasonal Average = 71.9
TSS – Average	mg/L	-	-	-	Seasonal Average = 25
TSS – Loadings	kg/d	-	-	-	Seasonal Average = 71.9
TP – Average	mg/L	-	-	-	Seasonal Average = 1.0
TP – Loadings	kg/d	-	-	-	Seasonal Average = 2.9
Total Ammonia Nitrogen (TAN) – Average	mg/L	-	-	-	N/A
Temperature – Average	°C	-	-	-	N/A
pH – Minimum to Maximum		-	-	-	6.0 to 9.5 (operational guideline)

Notes:

1 The Temagami South Lagoon discharges seasonally into Snake Island Lake. The discharge period occurs from May 1 to June 15 and from October 15 to November 30 each year.

2 One (1) lagoon cell sample is collected prior to the Spring and Fall discharge.

APPENDIX B
Summary of Call-outs

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3764044: Temagami North WTP Power Outage, 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	01/17/2024 09:45 AM
Arrive time:	01/17/2024 12:00 PM
Leave time:	01/17/2024 06:00 PM
Finish Time:	01/17/2024 06:00 PM
Report Date:	1/17/24
Reported By:	Cassandra Legros
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	PREDICTIVE MAINTENANCE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Cassandra Legros	04:00	00:00
	OPERATOR	Cassandra Legros	00:00	04:00

Log

Date	Created By	Description
1/23/24	Cassandra Legros	Temagami North WTP Power Outage, 6030

Received a call at 0938 for Temgami North loss of comm because there was no power for all Temagami North town due to an accident. I was not able to get to the facility due to the HWY closure therefore I logged in remotely and changed the setting from level to pressure to ensure the WTP made water for tower. I arrived on site at noon and monitored the generators at Cedar SPS and Spruce SPS. Power was restored at 1700. Changed the setting from pressure back to level, checked generators and tower. ok

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3764500: BCA Shut Down Temagami North 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	01/25/2024 05:45 PM
Arrive time:	01/25/2024 06:30 PM
Leave time:	01/25/2024 08:30 PM
Finish Time:	01/25/2024 08:30 PM
Report Date:	1/26/24
Reported By:	Bryce Logan
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	SUPER	Bryce Logan	00:00	04:00

Log

Date	Created By	Description
1/26/24	Bryce Logan	BCA Shut Down

Call for BCA Shut down . Filter 1 failed due to low raw flow. rest plant back into auto and tested operation and everything worked properly. Looks like the Actuator may be failing on raw control valve for the filter.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3847250: Chlorine Low Alarm Tem N WTP 6030

Asset:
Location: 6030-WTTM-P-DI 6030, Temagami North WTP, Process, Disinfection

Page Time:	03/02/2024 08:30 AM
Arrive time:	03/02/2024 09:30 AM
Leave time:	03/01/2024 01:00 PM
Finish Time:	03/04/2024 09:43 AM
Report Date:	3/4/24
Reported By:	Chris Barkhouse
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	INSTTECH	Chris Barkhouse	00:00	04:30

Log

Date	Created By	Description
3/4/24	Chris Barkhouse	

Called to come down and help swap out the old chlorine analyzer for a new setup. Verified calibration of new instrument. No calibration was needed at this time.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3805896: low Temp temagami south WTP 6028

Asset:
Location: 6028-WTTM-F 6028, Temagami South WTP, Facility

Page Time:	02/20/2024 07:00 AM
Arrive time:	02/20/2024 07:05 AM
Leave time:	02/20/2024 07:30 AM
Finish Time:	02/20/2024 07:30 AM
Report Date:	2/20/24
Reported By:	Claude Mongrain
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	MECHANIC	Claude Mongrain	00:00	04:00

Log

Date	Created By	Description
2/20/24	Claude Mongrain	call for tower lost com.
due to heater not working properly lost comunication to tower call Berry to install temporely heater		

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3851552: Low Chlorine alarm Tem S WTP 6028

Asset: 0000277459 ANALYZER PH Temagami S WTP
Location: 6028-WTTM 6028, Temagami South WTP

Page Time:	03/27/2024 03:30 PM
Arrive time:	03/27/2024 04:30 PM
Leave time:	03/27/2024 08:45 PM
Finish Time:	03/27/2024 08:45 PM
Report Date:	3/28/24
Reported By:	Bryce Logan
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6028-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	SUPER	Bryce Logan	00:00	04:00

Log

Date	Created By	Description
3/28/24	Bryce Logan	Low Chlorine Alarm

Call for Low Chlorine , Found 2 decent holes in the chlorine line where it passes through the wall cut out the chunk of warn line and added a coupling . Primed the pumps and line and checked for any other leaks. Performed a CT Calc for worse case scenario and lowered the alarm for the plant shut down to move some of the water to the distribution as it was safe to do so. raised the Chlorine dosage from 4.8 to 5 mg/l to give it a little boost we will lower it once the clearwell is back to its normal operating range. Chlorine was at 1.11 by the time i left so i put the low level alarm back to 1.0 for chlorine so that all compliance parameters were good. tower is full and plant is still filling cearwell.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3851688: Low Clear well Chlorine 6028

Asset: 0000277459 ANALYZER PH Temagami S WTP
Location: 6028-WTTM 6028, Temagami South WTP

Page Time:	03/29/2024 10:30 AM
Arrive time:	03/29/2024 10:45 AM
Leave time:	03/29/2024 12:00 PM
Finish Time:	03/29/2024 12:00 PM
Report Date:	3/29/24
Reported By:	Bryce Logan
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6028-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	SUPER	Bryce Logan	00:00	08:00

Log

Date	Created By	Description
3/29/24	Bryce Logan	Low Clearwell Chlorine

Found Over pressure valve bleeding back to the tank so chlorine was not making it to the clearwell. Adjusted the Backpressure regulator and shut the secondary valve off to stop it from bypassing. performed CT Calc for Worse Case Scenario turned up the hypo dosage from 5-5.5 mg/l to boost the chlorine in the clearwell. primed the pumps and verified the chlorine was getting to the injector. everything is back operational. All alarm set points returned to original settings plant back in Auto.

Municipality of Temagami
Water and Wastewater Systems
Quarterly Operations Report

April 1 to June 30, 2024

SUBMITTED BY

Ontario Clean Water Agency
15 Government Road East
Kirkland Lake, ON P2N 3J5

August 6, 2024, Rev. 0

Prepared by the Ontario Clean Water Agency
On behalf of the Municipality of Temagami

Table of Contents

1 Introduction

The Quarterly Operations Report summarizes regulatory compliance, quality management and system monitoring information. It provides a list of completed capital and major work projects

and any call-outs that occurred after hours. It also includes complaints received and Health and Safety activities or issues that occurred during the quarter.

2 Regulatory Compliance

2.1 Summary of Reportable Events

Facility	Date	MECP Event No.	Event/Non-compliance	Corrective Action
Temagami North DWS	April 12 & 13, 2024	1-5RDDCW	Extreme rainfall event caused the lagoon to exceed its allowable peak flow rate of 1200 m3/day having a maximum flow of 1478.6 m3 on April 12th and 1431.3 m3 on April 13th. Enhanced effluent sampling was initiated for abnormal conditions.	April 15 – notification provided to SAC and local MECP inspector

2.2 Third Party Inspections and Findings

The MECP conducted an inspection of the Temagami North DWS on June 13th. One (1) non-compliance was identified in the report dated July 26, 2024.

1. The system exceeded its maximum flow rate allowed in the MDWL during a watermain break. No exceedances occurred after the break was repaired. All corrective actions were taken at the time of the event and no further actions are required.

2.3 Quality and Environmental Management System (QEMS)

Re-accreditation audits by SAI Global have been scheduled for 2024. The first part of the re-accreditation audit (desk-top portion) was conducted by SAI Global on May 6th and no issues were identified. The on-site portion of the audit was re-scheduled for October 4th (originally scheduled for June 26th).

2.4 Reporting

A summary of regulatory reports submitted by OCWA on behalf of the Municipality are listed in the tables below.

Water System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual/Summary Reports for North and South Drinking Water Systems	By February 28th of each year	MECP and Owner	February 15, 2024

Sewage System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual Performance Reports for the North and South Lagoons	By March 31st of each year	MECP and Owner	March 22, 2024
Annual WSER Reporting for the North and South Lagoons	45 days after the end of the year	Environment Canada	January 26, 2024
Temagami North Lagoon – Quarterly Overflow/Bypass Reports	45 days after the quarter	MECP	January 11, 2024 (Q4 2023) April 19, 2024 (Q1 2024)
Quarterly Effluent Discharge Data Reports	The Ontario Clean Water Agency (OCWA) has an arrangement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter	MECP	February 15, 2024 (Q4, 2023) May 15, 2024 (Q1, 2024)

2.5 Other Important Information

Temagami Sewage Collection System (CLI-ECA)

- October 17, 2024 – Significant Drinking Water Threat Assessment required.

3 Monitoring Program

3.1 Monitoring Data

Drinking water sampling and testing required by Ontario Regulation 170/03 was completed this quarter and all results fell within regulatory limits.

Wastewater sampling and testing required by the systems' Environmental Compliance Approvals and the Wastewater Systems Effluent Regulation was completed this quarter and all results fell within their compliance limits.

Quarterly bacteriological sampling required under the Ministry of Health's Directive for the Marten River Fire Hall and the Temagami Chalet was completed this quarter on April 8th. Results were acceptable meeting regulatory limits.

Refer to Appendix A for Quarterly Data Reports.

3.2 Flows

3.2.1 Temagami North Water Treatment Plant

2024	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (328 m^3/day)
January	7492	7338	2.1%	237	329	100%*
February	5825	5524	5.2%	190	368	112%*
March	5074	4611	9.1%	149	199	61%
April	4482	4014	10%	134	150	46%
May	4157	3722	10%	120	188	57%
June	4517	3773	16%	126	276	84%

* High flows began in January and continued to February 6th due to a watermain break on Birch Street.

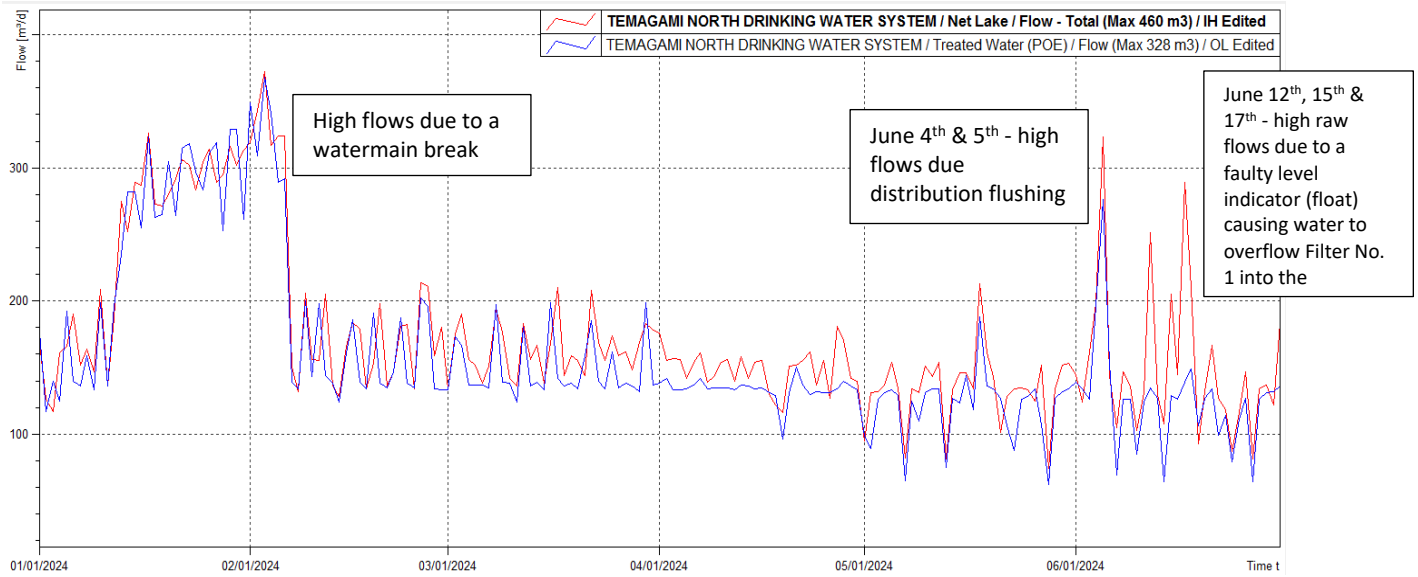

Figure 1: Temagami North WTP – Raw Water vs Treated Water Flow (January to June 2024)

3.2.2 Temagami North Lagoon

2024	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (390 m^3/d)	Maximum Influent Flow (m^3/d)	% of Rated Maximum Capacity (1200 m^3/day)
January	7525	243	62%	307	26%
February	6477	223	57%	431	36%
March	13408	433	111%*	930	78%
April	18801	627	160%*	1479	123%*
May	10616	342	88%	660	55%
June	6748	225	58%	439	37%

* High flows occurred in March and April due to a heavy rainfall. The system exceeded the maximum allowable peak flow rate of 1200 m3/day on April 12th and 13th due to extreme rainfall.

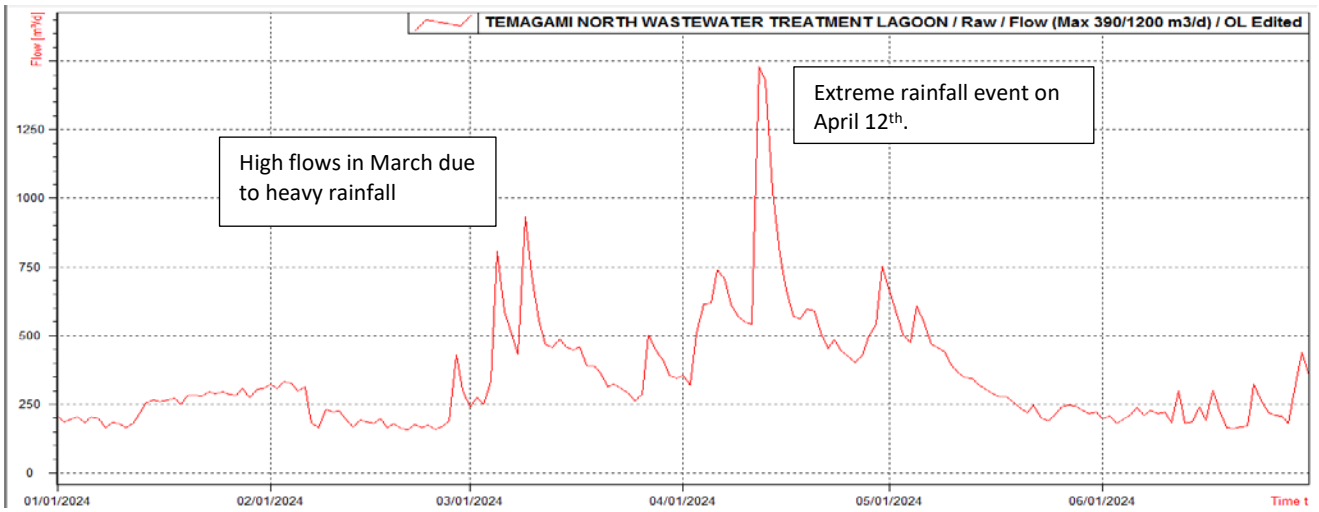

Figure 2: Temagami North Lagoon – Influent Flow (January to June 2024)

3.2.3 Temagami South Water Treatment Plant

2024	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (950 m^3/day)
January	4707	4197	11%	135	177	19%
February	4651	4160	11%	143	191	20%
March	5477	4863	11%	157	192	20%
April	4808	4267	11%	142	184	19%
May	5835	5278	9.5%	170	243	26%
June	7708	6898	11%	230	370	39%

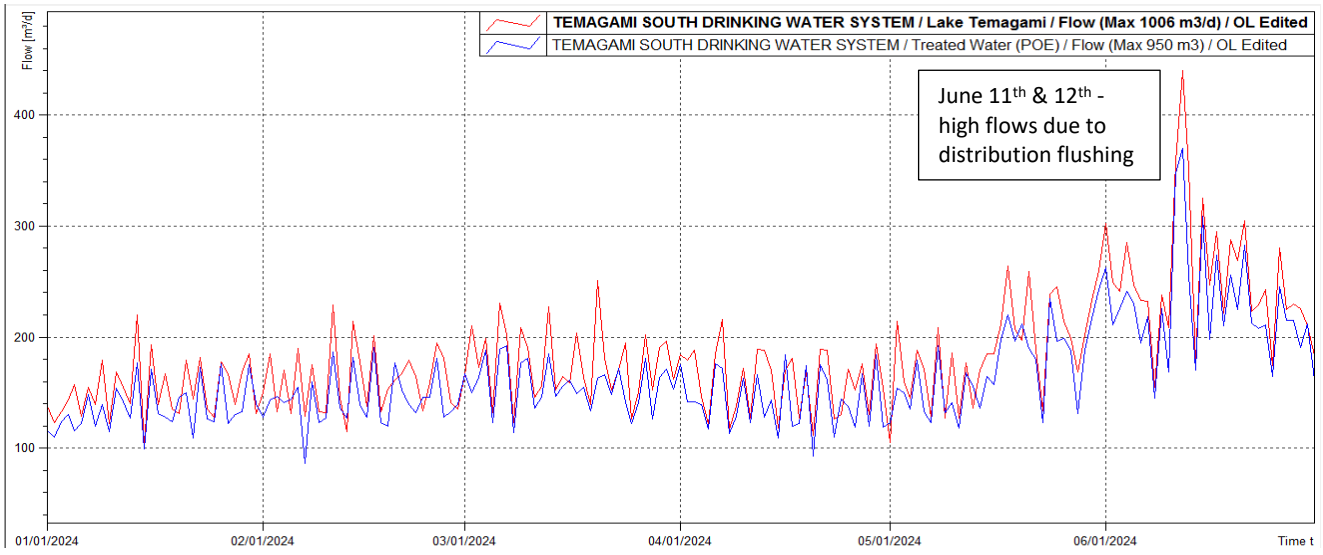

Figure 3: Temagami South WTP – Raw Water vs Treated Water Flow (January to June 2024)

3.2.4 Temagami South Lagoon

2024	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (232 m^3/d)	Maximum Influent Flow (m^3/d)	Average Daily Effluent Flow (2877 m^3/day)
January	4492	145	63%	172	N/A
February	3896	134	58%	146	N/A
March	5384	174	75%	199	N/A
April	5587	186	80%	317	N/A
May	4573	148	64%	167	2877*
June	4544	151	65%	168	N/A

*The lagoon discharges seasonally into Snake Lake. The Spring discharge occurred from May 6th to May 30th (allowable discharge period from May 1st to June 15th)

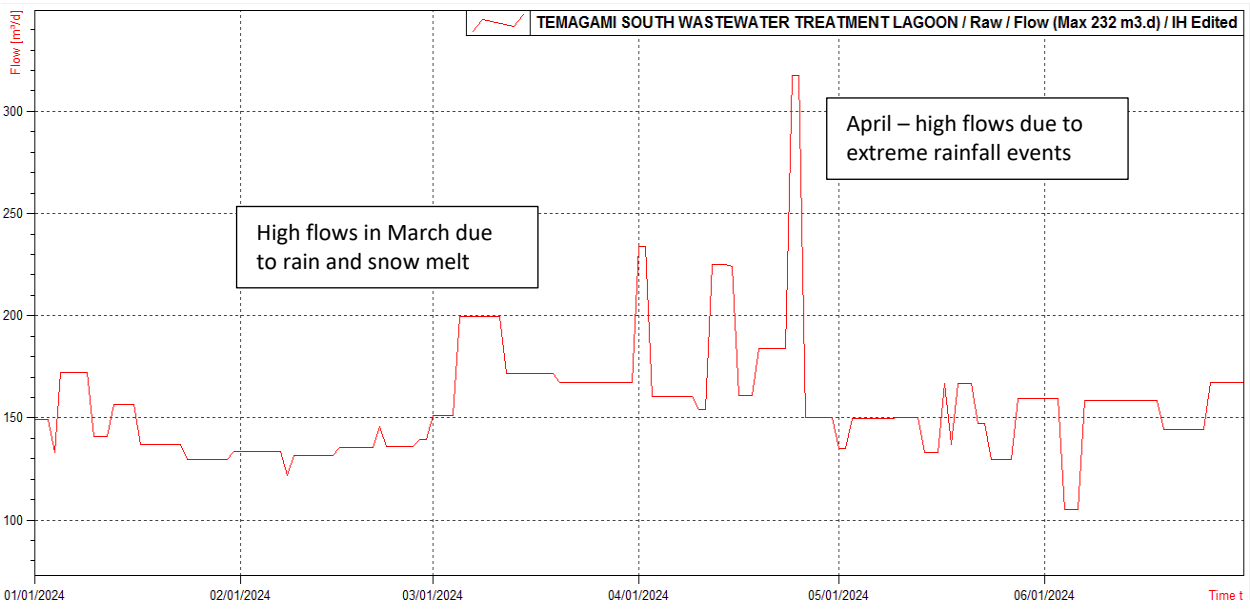

Figure 4: Temagami South Lagoon – Influent Flow (January to June 2024)

4 Asset Management

Preventative maintenance and equipment calibrations are scheduled, assigned and tracked using OCWA's Workplace Management System (Maximo). All monthly and quarterly work orders scheduled for this quarter were completed.

Corrective and emergency maintenance is also managed using Maximo. A summary of emergency and corrective work orders along with detailed maintenance reports can be made available upon request.

5 Capital & Major Maintenance Projects

Status of capital and major maintenance work completed to date in 2024

Temagami North Drinking Water System	
Project	**Status**
High flow investigation – water main break on Birch Street	Complete - February
Replaced the chlorine residual analyzer (CL-17)	Complete - March
Installed SCADA reporting package	Complete - May
Replaced raw water pH and temperature probe	Complete - May
Replaced isolation card on UPS	Complete - May
Replaced raw flow control valve on Filter No. 1	Complete - June

Temagami North Lagoon	
Project	Status
Installed pump at Spruce Drive SPS	Complete - February
Cedar SPS - Installed data logger	Complete - March
Purchased battery back-up (UPS) for critical monitoring equipment	Complete - June
Order DO probe for Net Monitoring	Complete - June

Temagami South Drinking Water System	
Project	Status
Purchased alkalinity testing equipment	Complete - April
Installed SCADA reporting package	Complete - May
Purchased sodium hypo pump diaphragm kits	Complete - June

Temagami South Lagoon	
Project	Status
Temagami Shores SPS - Replaced dialer	Complete - May

6 Call-Out Summary

System	Call-outs this Quarter	Total to Date in 2024
Temagami North DWS	2	5
Temagami North Lagoon	0	0
Temagami South DWS	2	5
Temagami South Lagoon	2	2
TOTAL	**6**	**12**

*Note: Not all call-outs are billed to the Owner; depends on the nature of the call.

Refer to Appendix B for a detailed after hour call back summary.

7 Complaints

No complaints were reported this quarter.

8 Health and Safety

8.1 Incidents

Number of Health and Safety Incidents reported this quarter = 0

8.2 Training

Health and Safety training sessions completed this quarter include:

- April – Hoisting and Rigging Fundamentals
- May – Facility Emergency Plan (FEP) Review
- June – Seasonal Environmental Hazards (summer)

APPENDIX A
Quarterly Data Reports

Temagami North Drinking Water System		April	May	June	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	181	213	323	Max. = 460
Raw Flow - Maximum Flow Rate	L/min	814 [1]	440	701 [1]	Max. = 456
Treated Flow - Maximum Daily Volume	m^3/d	150	188	276	Max. = 328
Treated Flow - Maximum Flow Rate	L/min	650	647	823	Max. = 1140 (CT) [2]
Raw Water					
Total Coliforms - Maximum	c/100mL	106	160	445	N/A
E.coli - Maximum	c/100mL	< 2	< 2	< 20	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	1.20	1.03	1.33	Min. = 0.85 (CT) [2]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 1 Turbidity - Maximum	NTU	0.31	0.35	0.30	Max. = 1
Filter 2 Turbidity - Maximum	NTU	0.60	0.33	0.19	Max. = 1
Nitrite	mg/L	< 0.05	-	-	Max. = 1
Nitrate	mg/L	0.11	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.38	0.26	0.29	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	35.2	-	-	Max. = 100 µg/L (RAA) [3]
Haloacetic Acids (HAAs)	µg/L	29	-	-	Max. = 80 µg/L (RAA) [4]
Lead - Maximum	µg/L	-	-	-	Max. = 10 µg/L [5]
Alkalinity – Maximum	mg/L	-	-	-	N/A [6]

Notes:

1 April 5 - high raw water flow rate (814 L/minute) for 11 minutes during maintenance and cleaning of the inlet pipe.

June 5 – high raw water flow rate (701 L/minute) for approximately 30 seconds during distribution flushing.

2 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami North water plant if the treated flow leaving the plant goes above 1140 L/minute or the free chlorine residual level drops below 0.85 mg/L to ensure primary disinfection is achieved. Primary disinfection was achieved this quarter.

3 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 62.8 ug/L

4 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 43.3 ug/L

5 Lead testing required every 3 years in March and September. Lead testing is required in 2024. First round of lead sampling was done on March 21, 2024.

6 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami North Wastewater Lagoon		April	May	June	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	627 [1]	342	225	Avg. Capacity = 390
Influent – Maximum Daily Flow	m^3/d	1479 [1]	660	439	Max. Capacity = 1200
Influent					
BOD_5 – Average	mg/L	21	30	17	N/A
Total Suspended Solids (TSS) – Average	mg/L	31	63	24	N/A
Total Phosphorus (TP) – Average	mg/L	0.65	1.11	0.94	N/A
Total Ammonia (TKN) – Average	mg/L	6.1	11	13	N/A
Effluent					
$cBOD_5$ – Average	mg/L	17	3.2	1.1	Monthly Average = 20
TSS – Average	mg/L	25	7.5	< 1.4	Monthly Average = 30
TP – Average	mg/L	0.180	0.075	0.031	Monthly Average = 0.6
Total Ammonia Nitrogen (TAN) – Average	mg/L	< 0.20	< 0.84	0.48	Monthly Average = 6
Dissolved Oxygen (DO) - Average	mg/L	14.5	10.7	8.72	N/A
Un-ionized Ammonia - Average	mg/L	0.004	0.002	0.001	N/A
E.coli - Geometric Mean (MGM) [2]	cfu/100mL	141	10	15	N/A
Temperature – Average	°C	6.7	18	21	N/A
pH – Minimum to Maximum		6.97 to 8.62	6.60 to 8.40	6.47 to 6.95	6.0 to 9.5 (inclusive)

Notes:

1 High flows on April 12th due to extreme rainfall event.

2 MGM *for E. coli* means the monthly geometric mean density of the sample results.

Temagami South Drinking Water System		April	May	June	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	216	264	440	Max. = 1006
Raw Flow - Maximum Flow Rate	L/min	900	625	703	Max. = 700
Treated Flow - Maximum Daily Volume	m^3/d	184	243	370	Max. = 950
Treated Flow - Maximum Flow Rate	L/min	682	701	1334 [1]	Max. = 1200 (CT) [1]
Raw Water					
Total Coliforms - Maximum	c/100mL	120	106	75	N/A
E.coli - Maximum	c/100mL	< 2	< 2	< 5	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	0.9 [1]	1.71	0.82 [1]	Min. = 1.00 (CT) [1]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 2 Turbidity - Maximum	NTU	0.32	0.37	0.70	Max. = 1
Nitrite	mg/L	< 0.05	-	-	Max. = 1
Nitrate	mg/L	< 0.05	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.87	1.22	0.97	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	29.3	-	-	Max. = 100 µg/L (RAA) [2]
Haloacetic Acids (HAAs)	µg/L	41	-	-	Max. = 80 µg/L (RAA) [3]
Lead - Maximum	µg/L	-	-	-	Max. = 10 µg/L [4]
Alkalinity – Maximum	mg/L	-	-	-	N/A [5]

Notes:

1 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami South water plant if the treated flow leaving the

plant goes above 1200 L/minute or the free chlorine residual level drops below 1.00 mg/L to ensure primary disinfection is achieved. Primary disinfection was achieved this quarter.

April 13 – low free chlorine of 0.90 mg/L due to chemical pump air lock. CT calculation performed and primary disinfection was achieved.

June 11 – high treated water flow rate (1334 L/minute) due to hydrant flushing. CT calculation performed and primary disinfection was achieved.

June 13 - low free chlorine of 0.82 mg/L when troubleshooting process issue. CT calculation performed and primary disinfection was achieved.

2 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 44.0 ug/L

3 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 37.8 ug/L

4 Lead testing required every 3 years in March and September. Lead testing is required in 2024. First round of lead sampling was done in on March 21, 2024.

5 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami South Wastewater System		April	May	June	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	186	148	151	Avg. Capacity = 232
Influent – Maximum Daily Flow	m^3/d	318	167	168	Max. Capacity = N/A
Influent					
BOD_5 – Average	mg/L	120	-	-	N/A
Total Suspended Solids (TSS) – Average	mg/L	86	-	-	N/A
Total Phosphorus (TP) – Average	mg/L	2.1	-	-	N/A
Total Ammonia (TKN) – Average	mg/L	22	-	-	N/A
Cell Contents Prior Discharge [1]					
Total Suspended Solids (TSS)	mg/L	9	-	-	N/A
Total Phosphorus (TP)	mg/L	0.146	-	-	N/A
Hydrogen Sulphide (HS)	mg/L	< 0.02	-	-	N/A
E. coli	cfu/100 mL	5	-	-	N/A
Effluent					
Discharge Period [2]		May 6th to May 30th			May 1 to June 15
Average Discharge Flow	m^3/d	-	2877	-	Max. = 2877
$cBOD_5$ – Average	mg/L	-	6.7	-	Annual Average = 25
BOD_5 – Average	mg/L	-	6.0	-	Seasonal Average = 25
BOD_5 – Loadings	kg/d	-	17.3	-	Seasonal Average = 71.9
TSS – Average	mg/L	-	22	-	Seasonal Average = 25
TSS – Loadings	kg/d	-	63.3	-	Seasonal Average = 71.9
TP – Average	mg/L	-	0.191	-	Seasonal Average = 1.0
TP – Loadings	kg/d	-	0.548	-	Seasonal Average = 2.9
Total Ammonia Nitrogen (TAN) – Average	mg/L	-	14	-	N/A
Temperature – Average	°C	-	14	-	N/A
pH – Minimum to Maximum		-	7.08 to 8.90	-	6.0 to 9.5 (operational guideline)

Notes:

1 One (1) lagoon cell sample is collected prior to the Spring and Fall discharge. The Spring sample was collected in April 30th.

2 The Temagami South Lagoon discharges seasonally into Snake Island Lake. The discharge period occurs from May 1 to June 15 and from October 15 to November 30 each year.

APPENDIX B
Summary of Call-outs

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3904030: Plant shut down Due to Power Fail at Temagami N WTP 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	
Arrive time:	
Leave time:	
Finish Time:	04/27/2024 09:50 AM
Report Date:	4/28/24
Reported By:	Shannen Knott
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Shannen Knott	00:00	04:00

Log

Date	Created By	Description
4/28/24	Shannen Knott	Call for plant shudown

Call for BCA shutdown. Logged in to SCADA remotely and check turbidities, chlorine and pH. All ok. Triggered a back wash on both filters and everything now ok.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4001191: Filter #1 Shutdown at Temagami N WTP 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	
Arrive time:	
Leave time:	
Finish Time:	06/24/2024 07:08 AM
Report Date:	6/24/24
Reported By:	Shannen Knott
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Shannen Knott	00:00	04:00

Log

Date	Created By	Description
6/24/24	Shannen Knott	Filter #1 Shutdown

Call for BCA shutdown. Logged in remotely and checked alarm history. Alarm was train #1 raw water fail. Checked all parameters and all were normal. Reviewed trend and plant finished cycle at around 2205. Put train #1 back in auto. Will continue to monitor.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3900440: 48 lakeshore curb shut off temagami south 6028

Asset: 0000277459 ANALYZER PH Temagami S WTP
Location: 6028-WTTM 6028, Temagami South WTP

Page Time:	04/07/2024 07:30 PM
Arrive time:	04/07/2024 08:30 PM
Leave time:	04/07/2024 09:00 PM
Finish Time:	04/07/2024 09:55 PM
Report Date:	4/8/24
Reported By:	Claude Mongrain
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	MECHANIC	Claude Mongrain	00:00	04:00

Log

Date	Created By	Description
4/8/24	Claude Mongrain	curb stop shut off
call from bryce to shut off curb stop due to pipe leaking on house can not shut off due to frozen curb stop town going to fix tomorrow water going to drain		

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3901721: Call In- Low Treated Chlorine at Temagami South WTP, 6028

Asset: 0000277459 ANALYZER PH Temagami S WTP
Location: 6028-WTTM 6028, Temagami South WTP

Page Time:	04/13/2024 11:00 AM
Arrive time:	04/13/2024 12:00 PM
Leave time:	04/13/2024 02:30 PM
Finish Time:	04/13/2024 02:30 PM
Report Date:	4/13/24
Reported By:	Cassandra Legros
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	PREDICTIVE MAINTENANCE
GL Account:	TEMAGY6028-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Cassandra Legros	00:00	04:00

Log

Date	Created By	Description
4/14/24	Cassandra Legros	Call In- Low Treated Chlorine at Temagami South WTP, 6028

Called in for low treated chlorine 0.94mg/L. Drove to site. Completed CT (pass) and worst scenario and changed setpoint in order to start the plant. I completed a backwash and ran the high lift. The chlorine was increasing but then quickly started dropping again. I did another backwash but caused a low clearwell therefore I completed another CT (pass) and worst case to get plant up again and chlorine residual increased. The chlorine residual increased to 1.36mg/L. Also increased k factor from 5.5 to 6.00 . The issue for the low chlorine was hypo pump #2 air locked. I primed the pump and poppet started to moved and started to working by increasing the chlorine residual but it would not stay primed for long and then air lock again causing the chlorine residual to drop quickly again. I put pump #2 out of service.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

3999680: call to fix grinder pump 5997 temagami south

Asset:
Location: 5997-WLTM-P-PV 5997, Temagami South Lagoon, Process, Piping and Valves

Page Time:	06/14/2024 10:20 PM
Arrive time:	06/14/2024 11:15 PM
Leave time:	06/15/2024 01:30 AM
Finish Time:	06/15/2024 02:15 AM
Report Date:	6/15/24
Reported By:	Claude Mongrain
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	MECHANIC	Claude Mongrain	00:00	04:00

Log

Date	Created By	Description
6/15/24	Claude Mongrain	call to fix grinder pump

at 22:20 got a call to fix grinder pump at the old age home call Mark as backup town worker on site to help to bring tank and pump to empty pit found hole in outlet pipe, try to seal with clamp but pipe collapsed put electrical tape stop leaking good until tomorrow for plumber to fix

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4000202: Power Outage at Temagami Shores SPS 5997

Asset:
Location: 5997-SPTM 5997, Temagami Shores SPS

Page Time:	
Arrive time:	
Leave time:	
Finish Time:	06/18/2024 07:33 AM
Report Date:	6/18/24
Reported By:	Shannen Knott
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Shannen Knott	00:00	04:00

Log

Date	Created By	Description
6/18/24	Shannen Knott	Power Outage

Power Outage at Temagami Shores SPS at 0311.
Alarm called again at 0316 and power was fully restored.

Municipality of Temagami
Water and Wastewater Systems
Quarterly Operations Report

July 1 to September 30, 2024

SUBMITTED BY

Ontario Clean Water Agency
15 Government Road East
Kirkland Lake, ON P2N 3J5

November 5, 2024, Rev. 0

Prepared by the Ontario Clean Water Agency
On behalf of the Municipality of Temagami

Table of Contents

1 Introduction

The Quarterly Operations Report summarizes regulatory compliance, quality management and system monitoring information. It provides a list of completed capital and major work projects and any call-outs that occurred after hours. It also includes complaints received and Health and Safety activities or issues that occurred during the quarter.

2 Regulatory Compliance

2.1 Summary of Reportable Events

Facility	Date	MECP Event No.	Event/Non-compliance	Corrective Action
Temagami South Sewage Collection System	August 28, 2024	1-ABUL47	Sewage bubbled out of a crack in the road when the Temagami Shores sewage pumping station was running. A vertical crack on the coupler caused the sewage spill. 	Vacuum truck removed and disposed of the spilled material. Broken pipe replaced with 3" ABS pipe, approximately 18" long. Incident was reported to appropriate authorities. 15-day Spill Report, submitted to MECP Director and local MECP as required on September 6, 2024

2.2 Third Party Inspections and Findings

The MECP conducted an inspection of the Temagami South DWS on September 12th. No non-compliances or recommendations were identified in the report dated October 30, 2024.

2.3 Quality and Environmental Management System (QEMS)

An Internal QEMS Audit was conducted for the Temagami Drinking Water Systems in the third quarter. No non-conformances were identified in the Audit Report dated July 12, 2024, however two (2) opportunities for improvement (OFIs) and three (3) comments/observations were noted. These findings along with their completion status is listed in Appendix A will be tracked until resolved.

2.4 Reporting

A summary of regulatory reports submitted by OCWA on behalf of the Municipality are listed in the tables below.

Water System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual/Summary Reports for North and South Drinking Water Systems	By February 28th of each year	MECP and Owner	February 15, 2024

Sewage System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual Performance Reports for the North and South Lagoons	By March 31st of each year	MECP and Owner	March 22, 2024
Annual WSER Reporting for the North and South Lagoons	45 days after the end of the year	Environment Canada	January 26, 2024
Temagami North Lagoon – Quarterly Overflow/Bypass Reports	45 days after the quarter	MECP	January 11, 2024 (Q4 2023) April 19, 2024 (Q1 2024) July 16, 2024 (Q2 2024)
Quarterly Effluent Discharge Data Reports	The Ontario Clean Water Agency (OCWA) has an arrangement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter	MECP	February 15, 2024 (Q4, 2023) May 15, 2024 (Q1, 2024) August 15, 2024 (Q2 2024)

2.5 Other Important Information

Temagami Sewage Collection System (CLI-ECA)

- October 17, 2024 – Significant Drinking Water Threat Assessment required – complete.

3 Monitoring Program

3.1 Monitoring Data

Drinking water sampling and testing required by Ontario Regulation 170/03 for the was completed this quarter and all results fell within regulatory limits.

Quarterly bacteriological sampling required under the Ministry of Health's Directive for the Marten River Fire Hall was completed on July 8th and Temagami Chalet was done on July 17th. Results were acceptable meeting regulatory limits

Wastewater sampling and testing required by the systems' Environmental Compliance Approvals and the Wastewater Systems Effluent Regulation was also completed this quarter and all results fell within their compliance limits.

Notes:

Temagami North Lagoon - The effluent flow through the old discharge pipe was stopped on July 16th at 9:17 AM to allow the lagoon to fill up and discharge to a new UV system and through the new effluent pipe.

July 4 - started emptying the lagoon to allow for the installation of a new effluent pipe for the UV system.

July 5 to 16 – daily effluent sampling was conducted during the lowering of the lagoon (required under Condition 9(2) of ECA 4250-D59RYU for abnormal operating conditions).

Refer to Appendix B for Quarterly Data Reports.

3.2 Flows

3.2.1 Temagami North Water Treatment Plant

2024	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (328 m^3/day)
January	7492	7338	2.1%	237	329	100%*
February	5825	5524	5.2%	190	368	112%*
March	5074	4611	9.1%	149	199	61%
April	4482	4014	10%	134	150	46%
May	4157	3722	10%	120	188	57%
June	4517	3773	16%	126	276	84%
July	5013	4416	12%	142	226	69%
August	4848	4437	8%	143	209	64%
September	4233	4209	0.6%	140	187	57%

* High flows began in January and continued to February 6th due to a watermain break on Birch Street.

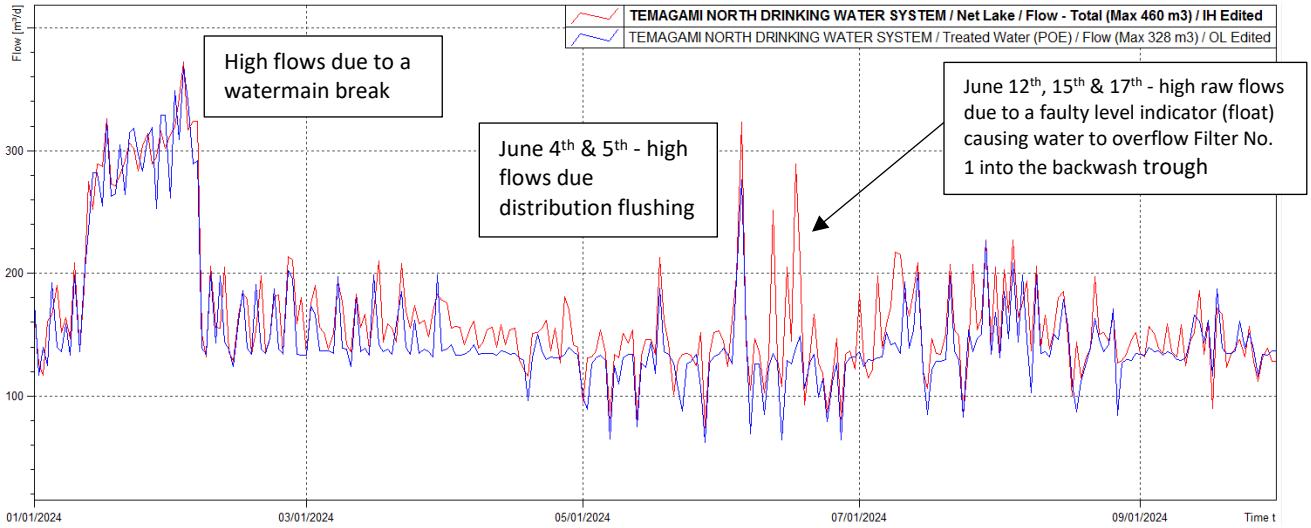

Figure 1: Temagami North WTP – Raw Water vs Treated Flow (January to September 2024)

3.2.2 Temagami North Lagoon

2024	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (390 m^3/d)	Maximum Influent Flow (m^3/d)	% of Rated Maximum Capacity (1200 m^3/day)
January	7525	243	62%	307	26%
February	6477	223	57%	431	36%
March	13,408	433	111%*	930	78%
April	18,801	627	160%*	1479	123%*
May	10,616	342	88%	660	55%
June	6748	225	58%	439	37%
July	4930	159	41%	357	30%
August	4674	151	39%	227	19%
September	6932	231	59%	467	39%

* High flows occurred in March and April due to a heavy rainfall. The system exceeded the maximum allowable peak flow rate of 1200 m3/day on April 12th and 13th due to extreme rainfall.

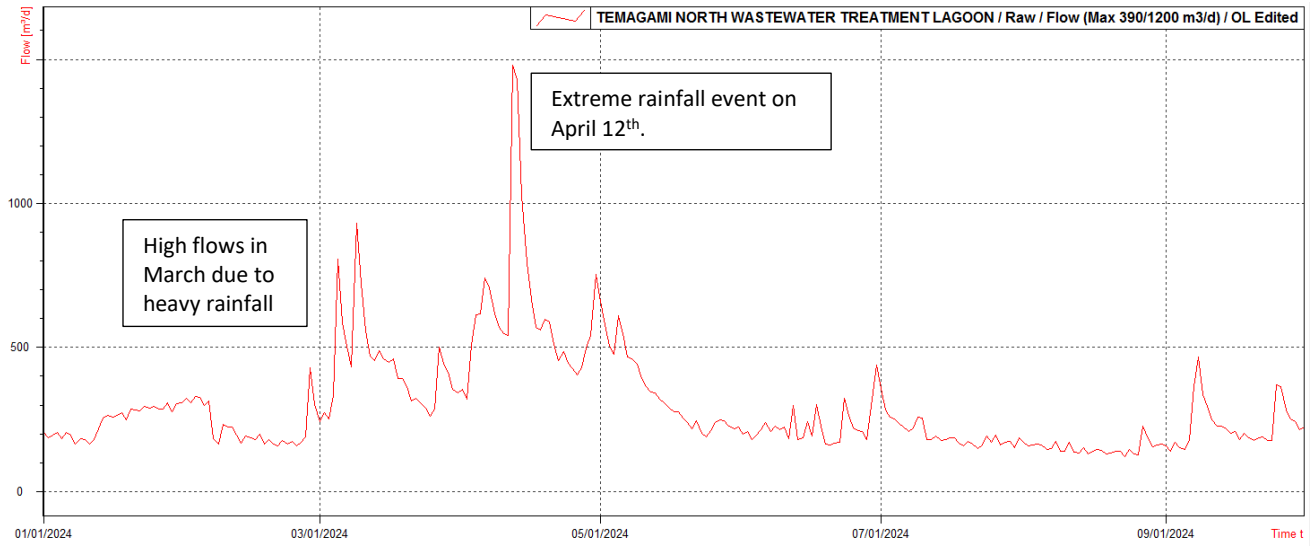

Figure 2: Temagami North Lagoon – Influent Flow (January to September 2024)

3.2.3 Temagami South Water Treatment Plant

2024	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (950 m^3/day)
January	4707	4197	11%	135	177	19%
February	4651	4160	11%	143	191	20%
March	5477	4863	11%	157	192	20%
April	4808	4267	11%	142	184	19%
May	5835	5278	9.5%	170	243	26%
June	7708	6898	11%	230	370	39%
July	8831	7933	10%	256	341	36%
August	9997	8986	10%	290	360	38%
September	8514	7622	10%	254	317	33%

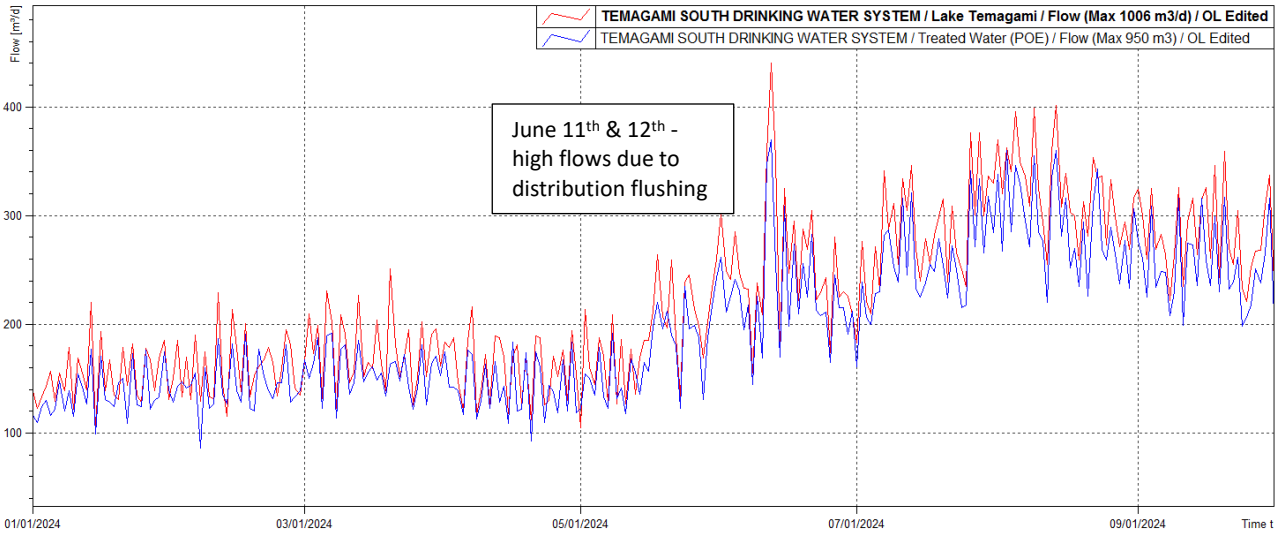

Figure 3: Temagami South WTP – Raw Water vs Treated Flow (January to September 2024)

3.2.4 Temagami South Lagoon

2024	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (232 m^3/d)	Maximum Influent Flow (m^3/d)	Average Daily Effluent Flow (2877 m^3/day)
January	4492	145	63%	172	N/A
February	3896	134	58%	146	N/A
March	5384	174	75%	199	N/A
April	5587	186	80%	317	N/A
May	4573	148	64%	167	2877*
June	4544	151	65%	168	N/A
July	5393	174	75%	224	N/A
August	5527	178	77%	224	N/A
September	4196	140	60%	160	N/A

*The lagoon discharges seasonally into Snake Lake. The Spring discharge occurred from May 6th to May 30th (allowable discharge period from May 1st to June 15th)

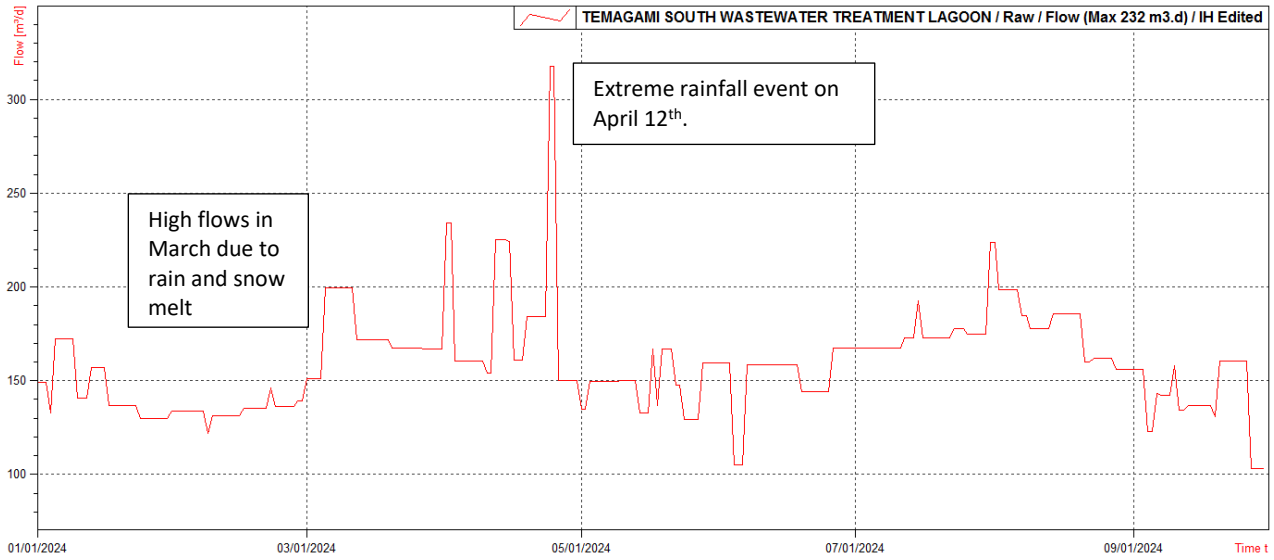

Figure 4: Temagami South Lagoon – Influent Flow (January to September 2024)

4 Asset Management

Preventative maintenance and equipment calibrations are scheduled, assigned and tracked using OCWA's Workplace Management System (Maximo). All monthly and quarterly work orders scheduled for this quarter were completed.

Corrective and emergency maintenance is also managed using Maximo. A summary of emergency and corrective work orders along with detailed maintenance reports can be made available upon request.

5 Capital & Major Maintenance Projects

Status of capital and major maintenance work completed to date in 2024

Temagami North Drinking Water System	
Project	**Status**
High flow investigation – water main break on Birch Street	Complete - February
Replaced the chlorine residual analyzer (CL-17)	Complete - March
Installed SCADA reporting package	Complete - May
Replaced raw water pH and temperature probe	Complete - May
Replaced faulty UPS and isolation card	Complete - May
Replaced raw flow control valve on Filter No. 1	Complete - June
Replaced broken soda ash transfer pump	Complete - July
Replaced Human Machine Interface (HMI) in MCC panel	Complete - August
Replaced faulty filter level control floats	Complete - August
Radio communication alarming	Complete - September
Generator service completed by contractor	Complete - September

Temagami North Lagoon	
Project	Status
Spruce Drive SPS - Installed No. 2 pump	Complete - February
Cedar SPS - Installed data logger	Complete - March
Cedar SPS - Purchased battery back-up (UPS) for critical monitoring equipment	Complete - June
Order DO probe for Net Monitoring	Complete - June
Spruce Drive SPS - generator service	Complete - September

Temagami South Drinking Water System	
Project	Status
Purchased alkalinity testing equipment	Complete - April
Installed SCADA reporting package	Complete - May
Purchased sodium hypo pump diaphragm kits	Complete - June
Repaired Hach SC 1000 controller	Complete - July
Replaced hypochlorite feed lines	Complete - August
Replaced faulty raw and treated water pH probes	Complete - August
Generator service completed by contractor	Complete - September
Replaced failed raw water flow meter	Complete - September
Repaired waste pit pump	Complete - September

Temagami South Lagoon	
Project	Status
Temagami Shores SPS - replaced alarm dialer	Complete - May

Temagami Chalet	
Project	Status
Replaced fouled UV sleeve and purchased spare	Complete - July

6 Call-Out Summary

System	Call-outs this Quarter	Total to Date in 2024
Temagami North DWS	5	10
Temagami North Lagoon	2	2
Temagami South DWS	2	7
Temagami South Lagoon	2	4
TOTAL	**11**	**23**

*Note: Not all call-outs are billed to the Owner; depends on the nature of the call.

Refer to Appendix C for a detailed after hour call back summary.

7 Complaints

No complaints were reported this quarter.

8 Health and Safety

8.1 Incidents

Number of Health and Safety Incidents reported this quarter = 0

8.2 Training

Health and Safety training sessions completed this quarter include:

- April – Safety Data Sheet (SDS) Review
- August – Psychosocial Hazards in the Workplace. Managing psychosocial hazards is crucial for maintaining a healthy and productive workplace.
- September – OCWA's STOP Program. This new health and safety initiative aims to encourage thoughtful preparation and mindful observation to manage risk at the individual and team level.

APPENDIX A

QEMS – Summary of Internal Audit Findings

Temagami Drinking Water Systems - 2024 Summary of Findings

Corrective Actions **Preventative Actions** **Other Actions**

Mj - Major Non-conforman **OFI** - Opportunity for Improvement **AI** - Action Item **BMP** - Best Management Practices

Mn - Minor Non-conformance **C/Obs** - Comments or Observations

IMPORTANT NOTE: A root cause analysis must be completed for all Corrective Actions

Section	Description of Findings	Type	Action	Responsibility/ Assignee	Resolution Target Date
Internal Audit: (Date of report: July 12, 2024)					
OP-03 Commitment & Endorsement	A QEMS policy revision requires operational plans to be re-endorsed by OCWA's top management and the Owner. The policy was recently revised on April 22, 2024. OCWA also made revisions to several procedures within the Plan which were released in June 2024. The Operational Plan with the latest revision should be re-endorsed in before the next internal audit in 2025. Also a new CAO was appointed on July 10, 2024.	**OFI**	Obtain re-endorsements of the Plan after updates are complete	I. Bruneau, PCT/QEMS Rep.	30-Apr-25
Director's Direction	There is a new Senior Operations Manager for the system as of May 13, 2024. Schedule C is to be updated to reflect this change.	**OFI**	Update Schedule C during the next update of the Plan.	I. Bruneau, PCT/QEMS Rep.	30-Apr-25
OP-11 Personal Coverage	May want to update the ORO letter to clearly identify the ORO for each subsystem and to indicate a second alternate.	**C/Obs**	Will be considered before the end of the year after staff changes occur (retirements and re-hires)	I. Bruneau, PCT/QEMS Rep.	31-Dec-24
OP-14 Review and Provision of Infrastructure	Consider adding the word "minimum" prior to the statement; 5 year rolling Recommended Capital and Major Maintenance Report in Step 3.1 as additional years can be forecasted.	**C/Obs**	Will be considered during the next update of the Plan.	I. Bruneau, PCT/QEMS Rep.	30-Apr-25
OP-17 - Measurement & Recording Equipment Calibration & Maintenance	There is mention of a Maximo SuperUser that can enter new equipment into the system. There is an opportunity to indicate who is a SuperUser (Operations Management or designate).	**C/Obs**	Consider adding this to the procedure during the next update.	I. Bruneau, PCT/QEMS Rep.	30-Apr-25

APPENDIX B
Quarterly Data Reports

Temagami North Drinking Water System		July	August	September	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	227	227	186	Max. = 460
Raw Flow - Maximum Flow Rate	L/min	436.8	436.8	437.4	Max. = 456
Treated Flow - Maximum Daily Volume	m^3/d	226	209	187	Max. = 328
Treated Flow - Maximum Flow Rate	L/min	652.2	651.6	648.0	Max. = 1140 (CT) [1]
Raw Water					
Total Coliforms - Maximum	c/100mL	20	1	452	N/A
E.coli - Maximum	c/100mL	< 2	1	1	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	1.35	1.38	1.43	Min. = 0.85 (CT) [1]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 1 Turbidity - Maximum	NTU	0.10	0.20	0.30	Max. = 1
Filter 2 Turbidity - Maximum	NTU	0.68	0.20	0.19	Max. = 1
Nitrite	mg/L	< 0.05	-	-	Max. = 1
Nitrate	mg/L	< 0.05	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.21	0.31	0.20	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	120 [2]	-	-	Max. = 100 µg/L (RAA) [2]
Haloacetic Acids (HAAs)	µg/L	90 [3]	-	-	Max. = 80 µg/L (RAA) [3]
Lead - Maximum	µg/L	-	-	< 0.10	Max. = 10 µg/L [4]
Alkalinity – Maximum	mg/L	-	-	39	N/A [5]

"<" denotes less than the laboratory's method detection limit

Notes:

1 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami North water plant if the treated flow leaving the plant goes above 1140 L/minute or the free chlorine residual level drops below 0.85 mg/L to ensure primary disinfection is achieved. Primary disinfection was achieved this quarter.

2 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 53.5 ug/L

3 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 49.5 ug/L

4 Lead testing required every 3 years in March and September. Lead testing is required in 2024. First round of lead sampling was done on March 21, 2024, second round of leading testing was done on September 9, 2024.

5 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami North Wastewater Lagoon		July	August	September	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	200	151	231	Avg. Capacity = 390
Influent – Maximum Daily Flow	m^3/d	357	227	467	Max. Capacity = 1200
Influent					
BOD_5 – Average	mg/L	43	108	101	N/A
Total Suspended Solids (TSS) – Average	mg/L	65	109	141	N/A
Total Phosphorus (TP) – Average	mg/L	1.9	3.3	2.7	N/A
Total Ammonia (TKN) – Average	mg/L	20	31	22	N/A
Effluent					
$cBOD_5$ – Average	mg/L	< 1.4	* [1]	* [1]	Monthly Average = 20
TSS – Average	mg/L	< 4.0	-	-	Monthly Average = 30
TP – Average	mg/L	0.07	-	-	Monthly Average = 0.6
Total Ammonia Nitrogen (TAN) – Average	mg/L	0.39	-	-	Monthly Average = 6
Dissolved Oxygen (DO) - Average	mg/L	7.2	-	-	N/A
Un-ionized Ammonia - Average	mg/L	0.0	-	-	N/A
E.coli - Geometric Mean (MGM) [2]	cfu/100mL	53	-	-	N/A
Temperature – Average	°C	22	-	-	N/A
pH – Minimum to Maximum		6.73 to 7.68	-	-	6.0 to 9.5 (inclusive)

"<" denotes less than the laboratory's method detection limit

Notes:

1 Effluent testing stopped on July 16th at 9:17 AM as part of the UV project and did not resume this quarter. July 5 to 16 – daily effluent sampling was conducted during the lowering of the lagoon (required under Condition 9(2) of ECA 4250-D59RYU for abnormal operating conditions)

2 MGM *for E. coli* means the monthly geometric mean density of the sample results.

Temagami South Drinking Water System		July	August	September	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	376	401	359	Max. = 1006
Raw Flow - Maximum Flow Rate	L/min	696.6	699.6	636.6	Max. = 700
Treated Flow - Maximum Daily Volume	m^3/d	341	360	317	Max. = 950
Treated Flow - Maximum Flow Rate	L/min	760.2	769.2	691.8	Max. = 1200 (CT) [1]
Raw Water					
Total Coliforms - Maximum	c/100mL	72	23	58	N/A
E.coli - Maximum	c/100mL	38	11	5	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	1.23	1.44	1.36	Min. = 1.00 (CT) [1]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 2 Turbidity - Maximum	NTU	0.40	0.38	0.29	Max. = 1
Nitrite	mg/L	< 0.05	-	-	Max. = 1
Nitrate	mg/L	< 0.05	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.94	1.00	0.93	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	65.8	-	-	Max. = 100 µg/L (RAA) [2]
Haloacetic Acids (HAAs)	µg/L	69	-	-	Max. = 80 µg/L (RAA) [3]
Lead - Maximum	µg/L	-	-	0.30	Max. = 10 µg/L [4]
Alkalinity – Maximum	mg/L	-	-	35	N/A [5]

"<" denotes less than the laboratory's method detection limit

Notes:

1 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami South water plant if the treated flow leaving the plant goes above 1200 L/minute or the free chlorine residual level drops below 1.00 mg/L to ensure primary disinfection is achieved. Primary disinfection was achieved this quarter.

2 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 53.5 ug/L

3 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 49.5 ug/L

4 Lead testing required every 3 years in March and September. Lead testing is required in 2024. First round of lead sampling was done on March 21, 2024, second round of leading testing was done on September 9, 2024.

5 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami South Wastewater System		July	August	September	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	174	178	140	Avg. Capacity = 232
Influent – Maximum Daily Flow	m^3/d	224	224	160	Max. Capacity = N/A
Influent					
BOD_5 – Average	mg/L	120	-	-	N/A
Total Suspended Solids (TSS) – Average	mg/L	108	-	-	N/A
Total Phosphorus (TP) – Average	mg/L	3.5	-	-	N/A
Total Ammonia (TKN) – Average	mg/L	30	-	-	N/A
Cell Contents Prior Discharge [1]					
Total Suspended Solids (TSS)	mg/L	-	-	-	N/A
Total Phosphorus (TP)	mg/L	-	-	-	N/A
Hydrogen Sulphide (HS)	mg/L	-	-	-	N/A
E. coli	cfu/100 mL	-	-	-	N/A
Effluent					
Discharge Period [2]		Effluent was not discharged this quarter			Oct. 15 to Nov. 30
Average Discharge Flow	m^3/d	-	-	-	Max. = 2877
$cBOD_5$ – Average	mg/L	-	-	-	Annual Average = 25
BOD_5 – Average	mg/L	-	-	-	Seasonal Average = 25
BOD_5 – Loadings	kg/d	-	-	-	Seasonal Average = 71.9
TSS – Average	mg/L	-	-	-	Seasonal Average = 25
TSS – Loadings	kg/d	-	-	-	Seasonal Average = 71.9
TP – Average	mg/L	-	-	-	Seasonal Average = 1.0
TP – Loadings	kg/d	-	-	-	Seasonal Average = 2.9
Total Ammonia Nitrogen (TAN) – Average	mg/L	-	-	-	N/A
Temperature – Average	^oC	-	-	-	N/A
pH – Minimum to Maximum		-	-	-	6.0 to 9.5 (operational guideline)

"<" denotes less than the laboratory's method detection limit

Notes:

1 One (1) lagoon cell sample is collected prior to the Spring and Fall discharge. No sample required this quarter.

2 The Temagami South Lagoon discharges seasonally into Snake Island Lake. The discharge period occurs from May 1 to June 15 and from October 15 to November 30 each year.

APPENDIX C
Summary of Call-outs

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4046657: BCA Shutdown Tem N Filt 1 6030

Asset:
Location: 6030-WTTM-P-FI 6030, Temagami North WTP, Process, Filtration

Page Time:	07/03/2024 10:00 PM
Arrive time:	07/03/2024 10:30 PM
Leave time:	07/03/2024 12:00 AM
Finish Time:	07/04/2024 09:16 AM
Report Date:	7/4/24
Reported By:	Chris Barkhouse
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	INSTTECH	Chris Barkhouse	00:00	04:00

Log

Date	Created By	Description
7/4/24	Chris Barkhouse	

Arrived to find filter one empty and filter was shutdown. Restarted filter and noticed level control valve leaking quite a bit when it should have been closed. Cycled valve a few times and it started working properly again. Let filter fill up and monitored operation for a bit. Valve seemed to work properly after that. Reset dialer and alarms. Will look at later today possibly.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4048906: Chem pump failure Tem N WTP 6030

Asset:
Location: 6030-WTTM-P-PC 6030, Temagami North WTP, Process, Process Controls

Page Time:	07/13/2024 05:15 PM
Arrive time:	07/13/2024 06:15 PM
Leave time:	07/13/2024 07:00 PM
Finish Time:	07/13/2024 08:00 PM
Report Date:	7/14/24
Reported By:	Andrew Gervais
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	INSTTECH	Andrew Gervais	00:00	04:00

Log

Date	Created By	Description
7/14/24	Andrew Gervais	Chem pump failure Tem N WTP 6030

Called to Tem North WTP for Hi or Low pH or BAC plant shut down alarm and chemcical pump failure alarm.
Logged in remotely and tried to reset alum pumps but they kept failing.
Drove to site and tried to restart the plant once alum pumps were visually inspected/reset.
Couldn't get the alum pumps to stay running.
Tested 100% flow of alum pumps to ensure floats would move.
Consulted with Claude.
Turned plant 1 & 2 to manual off and then back to auto to increase raw flow from 3.4 l/s to 6.8 l/s.
Reposition flow switch on alum pump mp10 rotometer as float wasn't quite able to reach it when running off one plant.
Hot flushed alum pump mp09 as it continue failing. It is still failing, need to investigate further at another time as another call came.
MP9 is turned off as MP10 is running fine.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4048907: Chem pump fail temagami north wtp6030

Asset:
Location: 6030-WTTM-P-PC 6030, Temagami North WTP, Process, Process Controls

Page Time:	07/13/2024 05:41 PM
Arrive time:	07/13/2024 05:45 PM
Leave time:	07/14/2024 06:15 PM
Finish Time:	07/13/2024 06:15 PM
Report Date:	7/14/24
Reported By:	Claude Mongrain
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	MECHANIC	Claude Mongrain	00:00	04:00

Log

Date	Created By	Description
7/14/24	Claude Mongrain	chem pump fail
help Andrew with chem pump and plant fail		

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4090642: Chemical Pump Failure at Tem N WTP 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	
Arrive time:	
Leave time:	
Finish Time:	08/01/2024 08:18 PM
Report Date:	8/1/24
Reported By:	Shannen Knott
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Shannen Knott	00:00	04:00

Log

Date	Created By	Description
8/1/24	Shannen Knott	Chemical Pump Failure

Call for chemical pump failure at 1759. Logged in remotely and noticed that poly pumps MP11 and MP12 for train 1 were locked out. Drove to site, reset pumps and lights indicated no flow and pumps tripped again. Hot flushed to make sure there was no blockage and reset the pumps again. Pumps tripped again. Opened the box up to look at the flow switch and noticed the lights weren't in the green. Called OIC Claude at 1852 and was instructed to adjust the flow screw on all pumps for train 1 and train 2 and test them to make sure switchover was good and that they weren't tripping. Stayed on site and monitored flow switches and manually switched them over by hand to make sure all pumps were pumping properly. Logged in remotely again at 2003 to make sure everything was good. Plant ok.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4090953: poly oump fail temagami north 6030

Asset:
Location: 6030-WTTM-P-CG 6030, Temagami North WTP, Process, Coagulation

Page Time:	08/01/2024 06:52 PM
Arrive time:	08/01/2024 06:52 PM
Leave time:	08/01/2024 07:15 PM
Finish Time:	08/01/2024 07:15 PM
Report Date:	8/2/24
Reported By:	Claude Mongrain
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	BUSCOMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	MECHANIC	Claude Mongrain	00:00	04:00

Log

Date	Created By	Description
8/2/24	Claude Mongrain	poly pump fail

Shannen call me at 18:52 for help poly pump keep failing on flow monitoring got her to start the plant and adjust flow on pump flow monitor guide her to check all pump by switch over face time to be able to guide her properly until 19:12

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4047386: Lagoon Lowering Tem N Lagoon 6029

Asset:
Location: 6029-WWTM 6029, Temagami North Lagoon

Page Time:	07/06/2024 11:00 AM
Arrive time:	07/06/2024 11:30 AM
Leave time:	07/06/2024 01:00 PM
Finish Time:	07/08/2024 07:12 AM
Report Date:	7/8/24
Reported By:	Chris Barkhouse
Supervisor:	

Site:	OCWASITE
Priority:	1
Work Type:	CALL
Status:	CLOSE
Classification	PREDICTIVE MAINTENANCE
GL Account:	TEMAGY6029-21OM

Log

Date	Created By	Description
7/8/24	Chris Barkhouse	

Travel to Temagami lagoon to pull a log to lower lagoon for contractors to tie in UV piping. Take abnormal samples.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4047388: Lagoon Lowering Tem N Lagoon 6029

Asset:
Location: 6029-WWTM 6029, Temagami North Lagoon

Page Time:	07/07/2024 12:00 PM
Arrive time:	07/07/2024 12:30 PM
Leave time:	07/07/2024 02:00 PM
Finish Time:	07/08/2024 07:15 AM
Report Date:	7/8/24
Reported By:	Chris Barkhouse
Supervisor:	

Site:	OCWASITE
Priority:	1
Work Type:	CALL
Status:	CLOSE
Classification	PREDICTIVE MAINTENANCE
GL Account:	TEMAGY6029-21OM

Log

Date	Created By	Description
7/8/24	Chris Barkhouse	

Travel to Temagami North lagoon to pull another log to lower lagoon for contractors to install a UV pipe and take abnormal samples.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4048919: Chem pump failure Tem S WTP 6028

Asset:
Location: 6028-WTTM-P-PC 6028, Temagami South WTP, Process, Process Controls

Page Time:	07/14/2024 02:15 PM
Arrive time:	07/14/2024 03:30 PM
Leave time:	07/14/2024 04:00 PM
Finish Time:	07/14/2024 05:00 PM
Report Date:	7/14/24
Reported By:	Andrew Gervais
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6028-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	INSTTECH	Andrew Gervais	00:00	04:00

Log

Date	Created By	Description
7/14/24	Andrew Gervais	Chem pump failure Tem S WTP 6028

Call at 14:19 for Tem S WTP plant BCA shutdown.
Logged in remotely to SCADA and found soda pump MP5 faulted. Reset MP5.
Started plant, and it was running/dosing using soda pump MP6.
Consulted operations group chat and was advised by Cassie/Claude to drive to site to check on MP5.
Arrived to site at 15:30.
Visually inspected MP5, switched off MP6 and started the plant. The plant is running with no issues.
Returned MP6 to auto.
Monitored plant unti 16:00.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4127302: Waste Pit High Level 6028

Asset:
Location: 6028-WTTM-P-WH 6028, Temagami South WTP, Process, Wastewater Handling

Page Time:	08/31/2024 11:00 PM
Arrive time:	08/31/2024 11:45 PM
Leave time:	09/01/2024 01:00 AM
Finish Time:	09/01/2024 09:15 AM
Report Date:	9/1/24
Reported By:	Chris Barkhouse
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY6028-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	INSTTECH	Chris Barkhouse	00:00	04:00

Log

Date	Created By	Description
9/1/24	Chris Barkhouse	

Arrived to find waste pit full and no pumps running. Found breaker in panel tripped, due to failed no 4 waste pump. Took pump 4 out of service and reset breaker. Monitored operation for a bit and reset alarms.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4050255: Called for grinder pump alarm behind grocery store in Temagami South (pump replaced)

Asset:
Location: 5997-SPTM 5997, Temagami Shores SPS

Page Time:	07/19/2024 06:17 PM
Arrive time:	07/19/2024 07:43 PM
Leave time:	07/19/2024 08:42 PM
Finish Time:	07/19/2024 08:42 PM
Report Date:	7/19/24
Reported By:	Marc Doyon
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	CLOSE
Classification	REFURBISH/REPLACE
GL Account:	TEMAGY5997-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Cassandra Legros	00:00	08:00
	INSTTECH	Marc Doyon	00:00	09:00

Log

Date	Created By	Description
7/20/24	Marc Doyon	

Called in for grinder pump alarm behind the grocery store in Temagami South. Northern Comm called three times within 20 minutes. Upon arrival it was discovered that the pit was flooded and had to be pumped out. This required a loader to transport the tote from the shop to the pump pit. A generator was used to power up the sump pump and sewage was pumped into the tote. Once the pit was clear of sewage, the pump was removed and replaced. We discovered that the shutoff valve to isolate the pump was broken and will be replaced by a plumber and also there was a crack in the elbow connected to the pipe which was temporarily taped up until the plumber could replace it the following morning. The job site was cleaned up and all the equipment, including the defective pump, was brought back to the shop.

Observations: Removing this type of pump from a depth of 8-10ft requires three workers to perform the task safely and a loader operator must also be present to transport the tote. There should be a plan to have the tote and equipment required to pump out the chamber before we arrive on site, since we must travel from out of town to assist with replacing these pumps. Even at a depth of 5ft, and the current setup of pulling the pump out with a rope, should require 3 workers to safely perform the task and avoid injuries.

7/22/24	Cassandra Legros	Called for grinder pump alarm behind grocery store in Temagami South (pump replaced)

Received a call from Marc to assist with a grinder pump that was in alarm located behind the grocery store. Drove to the location and inspected. The wetwet was flooded. Drove to the town garage and Marc contacted Barry and a town employee came to assist. We used a sump to pump the sewage out into the tote. Marc proceeded to isolate but it was broken but managed with vice scrip and proceeded to disconnect the pump. We removed the broken grinder pump and he installed the new one. Turned the grinder pump on but there was a leak at the elbow. Electrical tape was use as a

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4050255: Called for grinder pump alarm behind grocery store in Temagami South (pump replaced)

Log

Date	Created By	Description
temporary fix until a plumber could arrive the following day.		

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4142212: Call In - Loss of Power at Shores SPS, 5997

Asset:
Location: 5997-SPTM 5997, Temagami Shores SPS

Page Time:	09/07/2024 11:21 AM
Arrive time:	09/07/2024 11:24 AM
Leave time:	09/07/2024 11:40 AM
Finish Time:	09/07/2024 11:40 AM
Report Date:	9/7/24
Reported By:	Cassandra Legros
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	PREDICTIVE MAINTENANCE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Cassandra Legros	00:00	04:00

Log

Date	Created By	Description
9/8/24	Cassandra Legros	Call In - Loss of Power at Shores SPS, 5997

Called in for loss of power for over an hour. Logged in remotely and everything was fine. Monitored pump station for a bit. Ok

Municipality of Temagami
Water and Wastewater Systems
Quarterly Operations Report

October 1 to December 31, 2024

SUBMITTED BY

Ontario Clean Water Agency
15 Government Road East
Kirkland Lake, ON P2N 3J5

January 23, 2025, Rev. 0

Prepared by the Ontario Clean Water Agency
On behalf of the Municipality of Temagami

Table of Contents

1 Introduction

The Quarterly Operations Report summarizes regulatory compliance, quality management and system monitoring information. It provides a list of completed capital and major work projects and any call-outs that occurred after hours. It also includes complaints received and Health and Safety activities that occurred during the quarter.

2 Regulatory Compliance

2.1 Summary of Reportable Events

Facility	Date	MECP Event No.	Event/Non-compliance	Corrective Action
Temagami North Drinking Water System	October 8, 2024	1-BVCUI	The Municipal Drinking Water License (MDWL) allows a maximium volume of 328 m^3 per day of treated water to enter the distribution system. The total daily flow on October 8th was 385 m^3 which exceeded this limit. The suspected cause of the exceedance was a service line break on Hillcrest Dr. in conjunction with distribution flushing.	Distribution flushing was stopped until the service line was repaired on Oct. 10th.

2.2 Third Party Inspections / Audits and Findings

1) No MECP inspections were conducted this quarter

2) An off-site QEMS surveillance audit was conducted by Intertek - SAI Global on October 5th. Five (5) opportunities for improvement were identified:

    1. Some internal reporting forms (non-compliance, complaints) require updating – in progress

    2. Sampling, Testing and Monitoring procedure to be updated to indicate that sample results are also being tracked electronically - complete

    3. Sampling Schedule indicates that distribution chlorine sampling can be done either daily or 4/3 samples at least 48 hours apart. It should be clear which way sampling is being completed. Schedule updated.

4. The calibration sheet attached to the work order for the chlorine analyzer did not reference the correct work order. New procedure implemented to prevent these types of errors.

5. QMS Representative performs Internal Audits. Consider using additional staff so one is auditing their own work. To be considered during the 2025 auditing period.

2.3 Quality and Environmental Management System (QEMS)

The annual QEMS Management Review was conducted on December 4th. (review period from November 1, 2023 to October 31, 2024). The review is conducted at least once per year and evaluates the continuing suitability, adequacy and effectiveness of the Quality Management System. The following items were identified:

1. If a new standpipe is approved in Temagami North, updates to the Operational Plan and selected facility round sheets may be required.

2. Operators to review Operations and Emergency Plan manuals to ensure procedures are accurate and complete. Review planned for February 2025.

3. Train operators on the auditing process so that they better understand what auditors are looking for and how their work relates to Quality and Environmental Management System (QEMS). Planned for the 2025 auditing period.

2.4 Reporting

A summary of regulatory reports submitted by OCWA on behalf of the Municipality are listed in the tables below.

Water System Reports	Submission Frequency	Submitted to	Submission Date
2023 Annual/Summary Reports for North and South Drinking Water Systems	By February 28th of each year	MECP and Owner	February 15, 2024
2023 Annual Performance Reports for the North and South Lagoons	By March 31st of each year	MECP and Owner	March 22, 2024
Annual WSER Reporting for the North and South Lagoons	45 days after the end of the year	Environment Canada	January 26, 2024

Sewage System Reports	Submission Frequency	Submitted to	Submission Date
Temagami North Lagoon – Quarterly Overflow/Bypass Reports	45 days after the quarter	MECP	January 11, 2024 (Q4 2023) April 19, 2024 (Q1 2024) July 16, 2024 (Q2 2024), October 29, 2024 (Q3 2024)
Quarterly Effluent Discharge Data Reports	The Ontario Clean Water Agency (OCWA) has an arrangement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter	MECP	February 15, 2024 (Q4, 2023) May 15, 2024 (Q1, 2024) August 15, 2024 (Q2 2024), November 15, 2024 (Q3 2024)

2.5 Other Important Information

Temagami Sewage Collection System (CLI-ECA)

- February 17, 2025 –Operations and Maintenance Manuals for the collection system including sewage pumping stations is required (OCWA, capital project)
- March 31, 2025 – Annual Report to be completed and submitted to the Ministry (OCWA to complete).
- June 1, 2024 – Annual Report to be made available to the public via internet (Owner)

Temagami South Lagoon

- Dredging was performed from November 5th to the 7th by Bishop Water Inc. to remove approximately 1385 m^3 of sludge from the South Cell.

3 Monitoring Program

3.1 Monitoring Data

Drinking water sampling and testing required by Ontario Regulation 170/03 for the was completed this quarter. All results fell within regulatory requirements.

Wastewater sampling and testing required by the systems' Environmental Compliance Approvals and the Wastewater Systems Effluent Regulation was also completed this quarter and all results fell within their compliance limits.

Notes:

Temagami North Lagoon - The effluent flow through the old discharge pipe was stopped on July 16th at 9:17 AM to allow the lagoon to fill up and discharge to a new UV system and through the new effluent pipe. Flow started again on November 1st at 3:00 PM and sampling resumed on November 2nd.

Refer to Appendix A for Quarterly Data Reports.

3.2 Flows

3.2.1 Temagami North Water Treatment Plant

Month	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (328 m^3/day)
January	7492	7338	2.1%	237	329	100%*
February	5825	5524	5.2%	190	368	112%*
March	5074	4611	9.1%	149	199	61%
April	4482	4014	10%	134	150	46%
May	4157	3722	10%	120	188	57%
June	4517	3773	16%	126	276	84%
July	5013	4416	12%	142	226	69%
August	4848	4437	8%	143	209	64%
September	4233	4209	0.6%	140	187	57%
October	5414	5209	4%	168	385	117%**
November	5324	4590	14%	153	202	62%
December	5154	4716	8%	152	202	62%
2024	**61,533**	**56,559**	**8%**	**155**	**385**	**117%**

* High flows began in January and continued to February 6th due to a watermain break on Birch Street.

** High flows on October 8th due to a service line break on Hillcrest Drive in conjunction with distribution flushing.

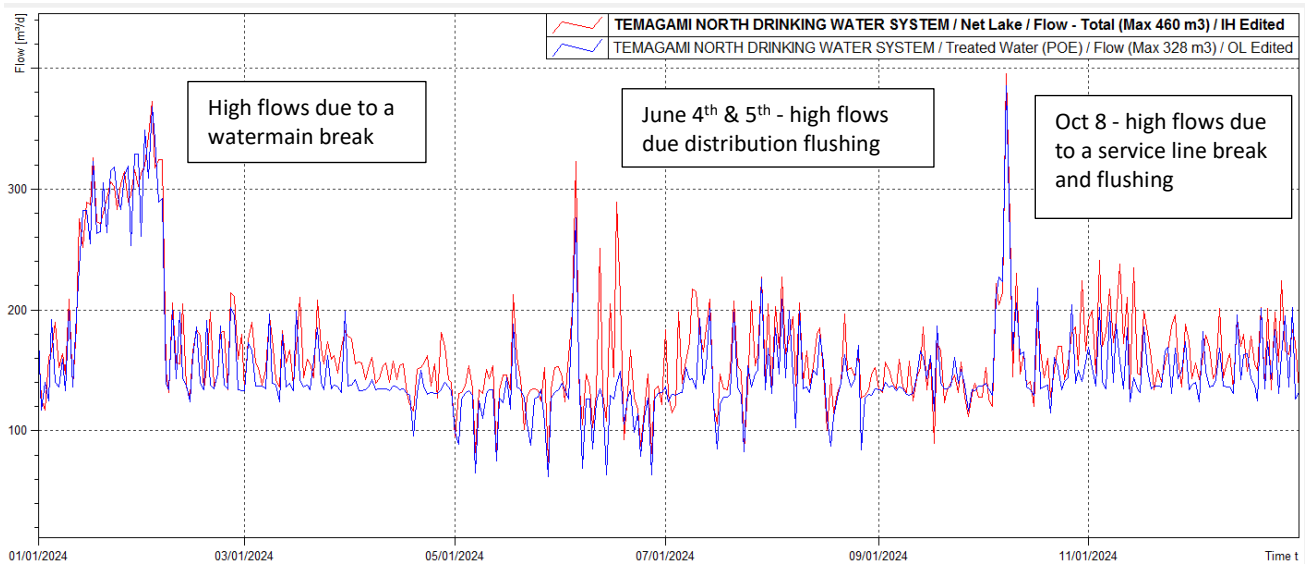

Figure 1: Temagami North WTP – Raw Water vs Treated Flow (January to December 2024)

3.2.2 Temagami North Lagoon

Month	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (390 m^3/d)	Maximum Influent Flow (m^3/d)	% of Rated Maximum Capacity (1200 m^3/day)
January	7525	243	62%	307	26%
February	6477	223	57%	431	36%
March	13,408	433	111%*	930	78%
April	18,801	627	160%*	1479	123%*
May	10,616	342	88%	660	55%
June	6748	225	58%	439	37%
July	6204	159	41%	357	30%
August	4674	151	39%	227	19%
September	6932	231	59%	467	39%
October	7392	238	61%	701	58%
November	12,677	423	108%	1069	89%
December	7654	247	63%	664	55%
2024	**109,108**	**298**	**76%**	**1479**	**123%**

* The system exceeded the maximum allowable peak flow rate of 1200 m3/day on April 12th and 13th due to extreme rainfall.

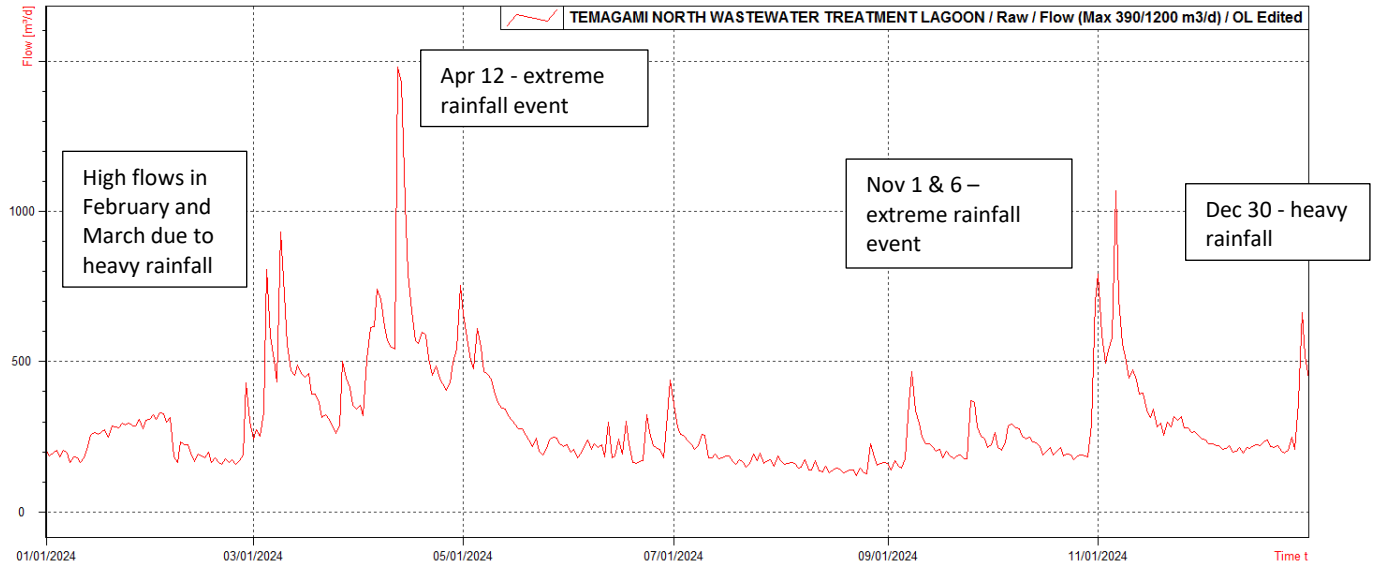

Figure 2: Temagami North Lagoon – Influent Flow (January to December 2024)

3.2.3 Temagami South Water Treatment Plant

Month	Total Raw Flow (m^3)	Total Treated Flow (m^3)	% Difference (raw – treated)	Average Daily Treated Flow (m^3)	Maximum Treated Flow (m^3)	% of the Rated Max. Capacity (950 m^3/day)
January	4707	4197	11%	135	177	19%
February	4651	4160	11%	143	191	20%
March	5477	4863	11%	157	192	20%
April	4808	4267	11%	142	184	19%
May	5835	5278	9.5%	170	243	26%
June	7708	6898	11%	230	370	39%
July	8831	7933	10%	256	341	36%
August	9997	8986	10%	290	360	38%
September	8514	7622	10%	254	317	33%
October	8300	7385	11%	238	303	32%
November	8061	7148	11%	238	320	34%
December	6039	5270	13%	170	293	31%
2024	**82,928**	**74,007**	**11%**	**202**	**370**	**39%**

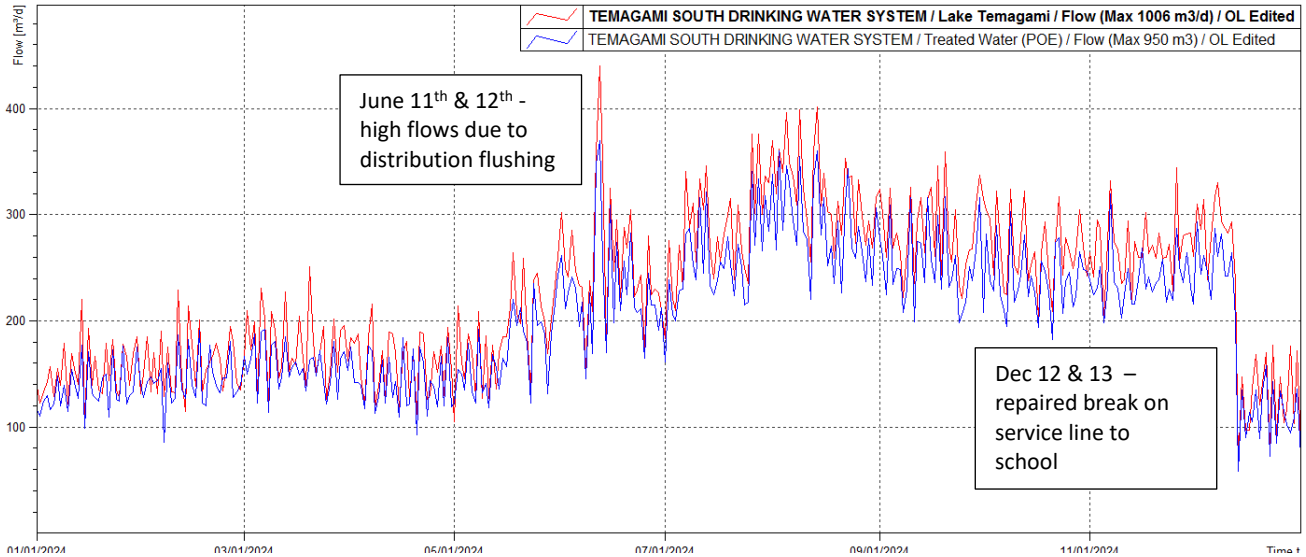

Figure 3: Temagami South WTP – Raw Water vs Treated Flow (January to December 2024)

3.2.4 Temagami South Lagoon

Month	Total Influent Flow (m^3)	Average Daily Influent Flow (m^3)	% of Average Day Rated Capacity (232 m^3/d)	Maximum Influent Flow (m^3/d)	Average Daily Effluent Flow (2877 m^3/day)
January	4492	145	63%	172	N/A
February	3896	134	58%	146	N/A
March	5384	174	75%	199	N/A
April	5587	186	80%	317	N/A
May	4573	148	64%	167	2490*
June	4544	151	65%	168	N/A
July	5393	174	75%	224	N/A
August	5527	178	77%	224	N/A
September	4196	140	60%	160	N/A
October	3906	126	54%	151	2616*
November	4499	150	66%	283	2656*
December	4360	141	61%	151	N/A
2024	**56,357**	**154**	**66%**	**318**	**2877**

*The lagoon discharges seasonally into Snake Lake. The Spring discharge occurred from May 6th to May 30th (allowable discharge period from May 1st to June 15th)

The Fall discharge occurred from October 15th to November 25th (allowable discharge period from October 15th to November 30th)

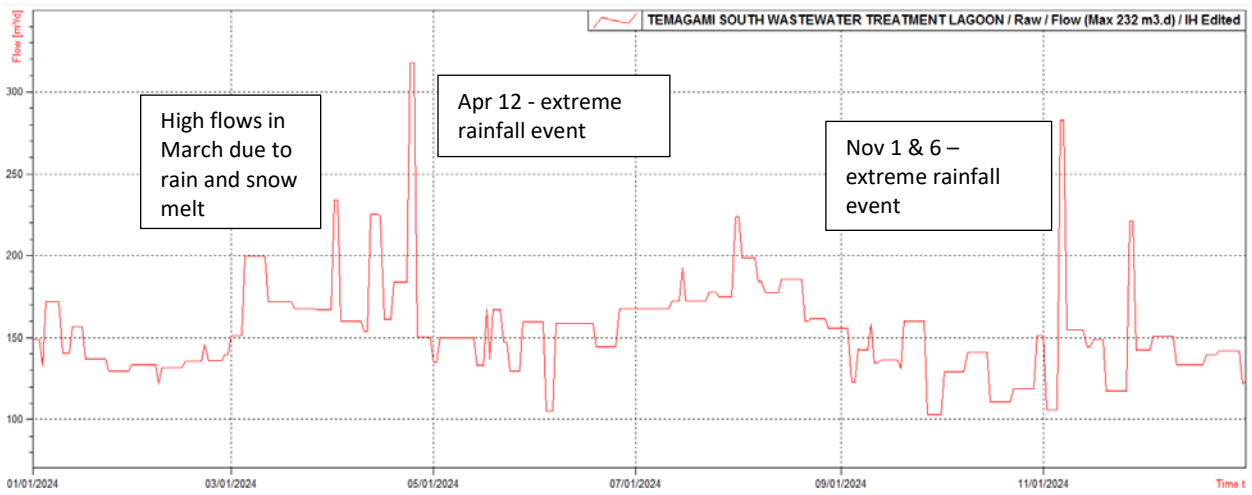

Figure 4: Temagami South Lagoon – Influent Flow (January to December 2024)

4 Asset Management

Preventative maintenance and equipment calibrations are scheduled, assigned and tracked using OCWA's Workplace Management System (Maximo). All monthly and quarterly work orders scheduled for this quarter were completed.

Corrective and emergency maintenance is also managed using Maximo. A summary of emergency and corrective work orders along with detailed maintenance reports can be made available upon request.

5 Capital & Major Maintenance Projects

Status of capital and major maintenance work completed to date in 2024

Temagami North Drinking Water System	
Project	**Status**
High flow investigation – water main break on Birch Street	Complete - February
Replaced the chlorine residual analyzer (CL-17)	Complete - March
Installed SCADA reporting package	Complete - May
Replaced raw water pH and temperature probe	Complete - May
Replaced faulty UPS and isolation card	Complete - May
Replaced raw flow control valve on Filter No. 1	Complete - June
Replaced broken soda ash transfer pump	Complete - July
Replaced Human Machine Interface (HMI) in MCC panel	Complete - August
Replaced faulty filter level control floats	Complete - August
Replaced soda ash and polymer chemical panels	Complete - August
Installed radio communication alarming	Complete - September
Generator service	Complete - September
Purchased chemical feed pump PM kits	Complete - November
Repaired leaking fittings in High Lift room	Complete - October
Distribution flow testing for Tulloch	Complete - December
Sodium hypochlorite pump repair by SCG	Complete - December
Replaced corroded sodium hypochlorite injection point and failed back pressure valve	Complete - December

Temagami North Lagoon	
Project	Status
Spruce Drive SPS - Installed No. 2 pump	Complete - February
Cedar SPS - Installed data logger	Complete - March
Cedar SPS - Purchased battery back-up (UPS) for critical monitoring equipment	Complete - June
DO probe for Net Monitoring	Complete - June
Spruce Drive SPS - generator service	Complete - September
UV project – on-site meetings/lowering of lagoon	Complete - October

Temagami South Drinking Water System	
Project	**Status**
Purchased alkalinity testing equipment	Complete - April
Installed SCADA reporting package	Complete - May
Purchased sodium hypo pump diaphragm kits	Complete - June

Temagami South Drinking Water System	
Project	**Status**
Repaired Hach SC 1000 controller	Complete - July
Replaced hypochlorite feed lines	Complete - August
Replaced faulty raw and treated water pH probes	Complete - August
Replaced alum and polymer chemical feed panels	Complete - August
Generator service completed by contractor	Complete - September
Replaced failed raw water flow meter	Complete - September
Repaired waste pit pump	Complete - September
Hydrant anti-freeze	Complete - September
DWQMS External Audit	Complete - October
PLC remote access license	Complete - October
Watermain break at school	Complete - December

Temagami South Lagoon	
Project	Status
Temagami Shores SPS - replaced alarm dialer	Complete - May
Sewer line break on Wildflower Avenue	Complete - August

Temagami Chalet	
Project	Status
UV fault	Complete - February
Replaced fouled UV sleeve and purchased spare	Complete - July
Spare UV sensor	Complete - October

6 Call-Out Summary

System	Call-outs this Quarter	Total to Date in 2024
Temagami North DWS	2	12
Temagami North Lagoon	1	3
Temagami South DWS	0	7
Temagami South Lagoon	0	4
TOTAL	**3**	**26**

*Note: Not all call-outs are billed to the Owner; depends on the nature of the call.

Refer to Appendix B for a detailed after hour call back summary.

7 Complaints

One complaint was documented this quarter.

Temagami Public School: 11 School Road - Brown water observed on November 19th, but cleared up after flushing within the school. Building Supervisor contacted OCWA on November 20th and requested that an operator visit the school and confirm that the water is safe.

Water line break in the area. Operators were on-site November 19th isolating a distribution valve feeding the school on Ojibway Lane which disturbed some debris in the line and caused the brown water.

Operator dispatched to the school on November 20th to ensure the water has cleared up, to test the chlorine residual and collect a bacteriological sample. Results were acceptable and the lab report was provided to the Building Supervisor on November 22nd.

The break in the service line to school was repaired on December 13th.

8 Health and Safety

8.1 Incidents

Number of Health and Safety Incidents reported this quarter = 0

8.2 Training

Health and Safety training sessions completed this quarter include:

- October – Hazardous Energy and De-energization (Lockout/Tag out Process)
- November – Asbestos Hazardous Management
- December – Holiday Safety at Home

APPENDIX A
Quarterly Data Reports

Temagami North Drinking Water System		October	November	December	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	395	241	224	Max. = 460
Raw Flow - Maximum Flow Rate	L/min	480 [1]	645 [1]	433	Max. = 456
Treated Flow - Maximum Daily Volume	m^3/d	385 [2]	202	202	Max. = 328
Treated Flow - Maximum Flow Rate	L/min	1330 [2]	748	660	Max. = 1140 (CT) [3]
Raw Water					
Total Coliforms - Maximum	c/100mL	60	78	108	N/A
E.coli - Maximum	c/100mL	2	4	< 2	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	0.99	1.51	1.63	Min. = 0.85 (CT) [3]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 1 Turbidity - Maximum	NTU	0.63	0.39	0.98	Max. = 1
Filter 2 Turbidity - Maximum	NTU	0.65	0.39	0.79	Max. = 1
Nitrite	mg/L	< 0.01	-	-	Max. = 1
Nitrate	mg/L	0.20	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.40	0.71	0.76	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	42.2	-	-	Max. = 100 µg/L (RAA) [4]
Haloacetic Acids (HAAs)	µg/L	55.0	-	-	Max. = 80 µg/L (RAA) [5]
Lead - Maximum	µg/L	-	-	-	Max. = 10 µg/L [6]
Alkalinity – Maximum	mg/L	-	-	-	N/A [7]

"<" denotes less than the laboratory's method detection limit

Notes:

1 October 1 – high raw water flows of 480 L/minute for approximately one minute during flushing/cleaning of the raw water pipe (Permit to take Water allowable limit = 456 L/minute).

November 21 - high raw water flows of 645 L/minute during flushing/cleaning of the raw water pipe (Permit to take Water allowable limit = 456 L/minute).

2 October 8 – high treated water volume and flow rate caused by a service line break in conjunction with distribution flushing. (Municipal Drinking Water License allowable limit = 328 m^3/day and Permit to take Water allowable limit = 456 L/minute).

Exceedance of a totalized flow is a reportable event (SAC Ref No. 1-BVCUI)

3 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami North water plant if the treated flow leaving the plant goes above 1140 L/minute or the free chlorine residual level drops below 0.85 mg/L to ensure primary disinfection is achieved. A high treated water flow rate of 1330 L/minute on October 8th was caused by a service line break and distribution flushing. A CT calculation was performed and primary disinfection was achieved.

4 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 63.1 ug/L

5 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 53.3 ug/L

6 Lead testing required every 3 years in March and September. Lead testing was completed on March 21, 2024, and September 9, 2024. Next sampling due in 2027.

7 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami North Wastewater Lagoon		October	November	December	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	238	423 [1]	247	Avg. Capacity = 390
Influent – Maximum Daily Flow	m^3/d	701	1069	664	Max. Capacity = 1200
Influent					
BOD_5 – Average	mg/L	73	34	48	N/A
Total Suspended Solids (TSS) – Average	mg/L	90	70	75	N/A
Total Phosphorus (TP) – Average	mg/L	2.6	1.7	1.7	N/A
Total Ammonia (TKN) – Average	mg/L	23	12	13	N/A
Effluent					
$cBOD_5$ – Average	mg/L	* [2]	1.36	1.34	Monthly Average = 20
TSS – Average	mg/L	-	< 1.6	< 1.1	Monthly Average = 30
TP – Average	mg/L	-	0.02	0.02	Monthly Average = 0.6
Total Ammonia Nitrogen (TAN) – Average	mg/L	-	0.39	0.31	Monthly Average = 6
Dissolved Oxygen (DO) - Average	mg/L	-	11.4	11.4	N/A
Un-ionized Ammonia - Average	mg/L	-	0.0007	0.0003	N/A
E.coli - Geometric Mean (MGM) [2]	cfu/100mL	-	< 2.0	< 0.2	Average Geomean = 200 [3]
Temperature – Average	°C	-	6.8	4.4	N/A
pH – Minimum to Maximum		-	6.98 to 7.19	6.77 to 7.15	6.0 to 9.0 (inclusive)

"<" denotes less than the laboratory's method detection limit

Notes:

1 Heavy rainfall on November 1st and 6th resulted in high influent flows that exceeded the plant's peak design capacity of 390 m3/day.

2 Effluent testing stopped on July 16th at 9:17 AM because of the UV project and resumed on November 2nd after the effluent started flowing through the new UV building on November 1st at approximately 3:00 PM.

3 The *E. coli* shall not exceed the monthly geometric mean limit of 200 cfu/100mL during any month.

Temagami South Drinking Water System		October	November	December	Compliance
Flows					
Raw Flow - Maximum Daily Volume	m^3/d	324	344	330	Max. = 1006
Raw Flow - Maximum Flow Rate	L/min	689	674	654	Max. = 700
Treated Flow - Maximum Daily Volume	m^3/d	303	320	293	Max. = 950
Treated Flow - Maximum Flow Rate	L/min	1306 [1]	685	847	Max. = 1200 (CT) [1]
Raw Water					
Total Coliforms - Maximum	c/100mL	42	78	94	N/A
E.coli - Maximum	c/100mL	8	4	< 2	N/A
Treated Water					
Free Chlorine Residual – Min.	mg/L	1.45	1.47	0.87 [1]	Min. = 1.00 (CT) [1]
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Filter 2 Turbidity - Maximum	NTU	0.23	0.38	0.38	Max. = 1
Nitrite	mg/L	< 0.01	-	-	Max. = 1
Nitrate	mg/L	< 0.10	-	-	Max. = 10
Distribution Water					
Free Chlorine Residual - Minimum	mg/L	0.98	1.10	0.76	Min. = 0.05
Total Coliforms - Maximum	c/100mL	0	0	0	Max. = 0
E.coli - Maximum	c/100mL	0	0	0	Max. = 0
Trihalomethanes (THMs)	µg/L	40.5	-	-	Max. = 100 µg/L (RAA) [2]
Haloacetic Acids (HAAs)	µg/L	49.0	-	-	Max. = 80 µg/L (RAA) [3]
Lead - Maximum	µg/L	-	-	-	Max. = 10 µg/L [4]
Alkalinity – Maximum	mg/L	-	-	-	N/A [5]

"<" denotes less than the laboratory's method detection limit

Notes:

1 CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Temagami South water plant if the treated flow leaving the plant goes above 1200 L/minute or the free chlorine residual level drops below 1.00 mg/L to ensure primary disinfection is achieved. A CT calculation was performed on the following days to ensure primary disinfection was achieved.

October 32 - a high treated water flow rate of 1306 L/minute on October 23rd was caused by distribution flushing.
December 29 – a low chlorine of 0.87 mg/L was caused when the sodium hypochlorite pumps tripped.

2 Maximum Allowable Concentration (MAC) for Trihalomethanes (THMs) = 100 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 43.1 ug/L

3 Maximum Allowable Concentration (MAC) for Haleoacetic Acids (HAAs) = 80 ug/L (Four Quarter Running Average). The running average to the end of this quarter = 44.8 ug/L

4 Lead testing required every 3 years in March and September. Lead testing was completed on March 21, 2024, and September 9, 2024. Next sampling due in 2027.

5 Alkalinity testing required twice per year. Sampling is done in March and September of each year.

Temagami South Wastewater System		October	November	December	Compliance
Flows					
Influent – Average Daily Flow	m^3/d	126	150	141	Avg. Capacity = 232
Influent – Maximum Daily Flow	m^3/d	151	283	151	Max. Capacity = N/A
Influent					
BOD_5 – Average	mg/L	230	-	-	N/A
Total Suspended Solids (TSS) – Average	mg/L	124	-	-	N/A
Total Phosphorus (TP) – Average	mg/L	4.7	-	-	N/A
Total Ammonia (TKN) – Average	mg/L	47	-	-	N/A
Cell Contents Prior Discharge [1]					
Total Suspended Solids (TSS)	mg/L	4	-	-	N/A
Total Phosphorus (TP)	mg/L	0.08	-	-	N/A
Hydrogen Sulphide (HS)	mg/L	< 0.02	-	-	N/A
E. coli	cfu/100 mL	0	-	-	N/A
Effluent					
Discharge Period [2]		October 15 to November 25, 2024			Oct. 15 to Nov. 30
Average Discharge Flow	m^3/d	2877	2877	-	Max. = 2877
$cBOD_5$ – Average	mg/L	1.8	-	-	Annual Average = 25
BOD_5 – Average	mg/L	3.6	< 0.7	-	Seasonal Average = 25
BOD_5 – Loadings	kg/d	10	2.0	-	Seasonal Average = 71.9
TSS – Average	mg/L	15	3.2	-	Seasonal Average = 25
TSS – Loadings	kg/d	42	9.1	-	Seasonal Average = 71.9
TP – Average	mg/L	0.23	0.03	-	Seasonal Average = 1.0
TP – Loadings	kg/d	0.67	0.07	-	Seasonal Average = 2.9
Total Ammonia Nitrogen (TAN) – Average	mg/L	10	7.4	-	N/A
Temperature – Average	°C	7.9	7.4	-	N/A
pH – Minimum to Maximum		6.99 to 7.06	6.58 to 6.67	-	6.0 to 9.5 (operational guideline)

"<" denotes less than the laboratory's method detection limit

Notes:

1 One (1) lagoon cell sample is collected prior to the Spring and Fall discharge. Sample collected on October 1, 2024.

2 The Temagami South Lagoon discharges seasonally into Snake Island Lake. The discharge period occurs from May 1 to June 15 and from October 15 to November 30 each year.

APPENDIX B
Summary of Call-outs

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4197012: Power Outage at Temagami North WTP 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	
Arrive time:	
Leave time:	
Finish Time:	10/30/2024 07:56 AM
Report Date:	10/30/24
Reported By:	Shannen Knott
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Shannen Knott	00:00	04:00

Log

Date	Created By	Description
10/30/24	Shannen Knott	Power Outage

Call at 1630 for chemical pump failure and BCA shutdown. Logged in remotely and post soda chemical pumps were tripped and locked out. Arrived on site and the pumps had reset due to the power flicker. Put both trains back in auto, started the plant and found that the flow switches were affected by the heat of the water from mixing that morning. Mixed in 1 bag of soda ash with cold water, monitored on site for another hour and no adjustments were needed for the switches. Decreased the post soda from 0.70 k factor to 0.65 k factor due to the treated pH increasing (7.62). Instructed by OIC Bryce. Plant was still running and switches were stabilized when I left.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4279337: Call In - High Filter 1 Turbidity and Plant Shutdown at Tem N WTP, 6030

Asset:
Location: 6030-WTTM 6030, Temagami North WTP

Page Time:	12/11/2024 06:34 PM
Arrive time:	12/11/2024 07:00 PM
Leave time:	12/11/2024 08:43 PM
Finish Time:	12/11/2024 08:43 PM
Report Date:	12/11/24
Reported By:	Cassandra Legros
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	PREDICTIVE MAINTENANCE
GL Account:	TEMAGY6030-21OM

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Cassandra Legros	00:00	02:00

Log

Date	Created By	Description
12/16/24	Cassandra Legros	Call In - High Filter 1 Turbidity and Plant Shutdown at Tem N WTP, 6030

Called in for high filter turbidity and plant shutdown. Arrived on site and filter 1 was shutdown because the turbidity had spiked above 1 NTU at startup. It was only the one filter that was affected therefore while the plant was shutdown, I cleaned the filter turbidity analyzer but no solids in the vial and vial was ok. I increased the alum from 32.00mg/L to 34.00 mg/L cause of possible lake turnover. Pre soda was ideal. The turbidity was going down on its owns so started the plant but was still high, I initiated a backwash and monitored. Once the plant was running, I increased the water flow going to the filter 1 turbidity analyzer and noticed lot of air bubbles causing turbidity spikes. It started regulating and turbidity started to go down on its owns. Checked pumps and completed drawdown on alum pumps and my results were approx 1.32L/h and the pump rate is 1.38L/h. Monitored and turbidity was ok.

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Work Order Call Back Details Report

4234561: Abnormal Operations at Tem N Lagoon Due to Heavy Rain 6029

Asset:
Location: 6029-WWTM 6029, Temagami North Lagoon

Page Time:	
Arrive time:	
Leave time:	
Finish Time:	11/03/2024 09:12 AM
Report Date:	11/3/24
Reported By:	Shannen Knott
Supervisor:	

Site:	OCWASITE
Priority:	5
Work Type:	CALL
Status:	COMP
Classification	REFURBISH/REPLACE
GL Account:	TEMAGN6028-24CO

Actual Labor

Task ID	Craft	Labor	Regular Hours	Premium Hours
	OPERATOR	Shannen Knott	00:00	04:00

Log

Date	Created By	Description
11/3/24	Shannen Knott	Abnormal Operations at Tem N Lagoon 6029

Drove to site to collect effluent samples. Recorded pH, DO and temp. Drove the samples to the lab as there was an ecoli sample included.